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DIFFERENTIAL DIAGNOSIS OF PEPTIC ULCER *

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The diagnosis of gastric and duodenal ulcer is not made so frequently now as it was ten or eight or even six years ago. In 1912, for instance, the total number of patients seen for diagnosis, all of them with medical ailments and a large proportion complaining of "stomach trouble," amounted to 445; and among these a diagnosis of ulcer, gastric or duodenal, was made in twenty-eight. In 1918, with a total of 461 cases, the diagnosis of ulcer was made only ten times. The main reason for this decrease lies in the more rigid tests gradually adopted, and the attempt to substitute demonstration for inference, before a conclusion is reached.

The data on which the diagnosis of ulcer depended only a few years ago were obtained from history, physical examination and analysis of gastric contents.

IMPORTANCE OF THE HISTORY OF THE CASE

The history was considered of special importance and almost diagnostic. The well known points in this history are its chronicity, extending over years; its remissions, for weeks or months, during which the symptoms are absent or much less severe; its rhythmic cycle of events while an attack persists; the manifestations all relieved by taking food, but recurring at a variable interval after eating, and then increasing rapidly until food is taken again, or some remedy, such as soda, or until vomiting occurs; finally, the character of the patient's symptoms, such as heartburn, belching, water-brash, nausea and often severe pain before vomiting gives relief—in general, a complaint of acidity and sour stomach. If to these details there was added the story that the vomitus contained blood; or if a patient was first seen with hematemesis and presented a history of long-standing "sour stomach" preceding, gastric ulcer assumed the first place in the diagnosis.

Two facts, however, have gradually impressed themselves on me; first, a history such as the one outlined does not invariably mean ulcer; and second, ulcer may exist even though the history does not correspond to the usual type. One becomes convinced, as years accumulate experience, that the so-called ulcer history is only a hyperacidity history; that any condition giving rise to hyperacidity may thus simulate ulcer; and that to infer ulcer from history alone frequently leads to error. On the other hand, ulcer may exist without hyperacidity, with normal or subnormal acid values, and thus without presenting the familiar story we have learned to expect. Furthermore, experience with cases observed during the past thirteen years, on the records of which this paper is based, teaches that vomiting of blood is not a common incident of ulcer; and in 136 cases observed during the past six years, in which the diagnosis of ulcer seemed clearly demonstrated by all the methods to be described later on, hematemesis occurred in only fifteen. It is also a well known fact, confirmed by numerous observers, that hematemesis may occur in association with hyperchlorhydria from any cause, when no ulcer exists.

THE VALUE OF THE PHYSICAL EXAMINATION

Physical examination has always been considered chiefly of value in ulcer for the negative evidence it presents. The only sign expected was a point of tenderness elicited on pressure over the epigastrium, or one or the other hypochondrium. But this evidence, of course, is entirely subjective and dependent on the patient's varying sensibility to pain; so that neither its presence nor its absence is conclusive. There has never been any objective sign of ulcer, nothing that could be definitely seen or felt by the one examining. A tumor palpable in the gastric area may very rarely, in a thin-walled abdomen, be due to the cicatricial tissue of an old ulcer; but such a tumor must always be looked on with suspicion, is always more likely to be a neoplasm, and ought always to be considered of sufficient seriousness to justify exploratory laparotomy. The discovery of a peristaltic wave across the stomach, from left to right, means pyloric obstruction and hypertrophy of the gastric walls; but it does not by itself indicate ulcer any more than it does cancer or adhesions, as a cause of the obstruction. The entire absence of any abnormality on physical examination has thus long been assumed to be characteristic of ulcer, when the history has already created an impression that ulcer exists. But we now know that several other intra-abdominal conditions, such as an obliterative appendicitis or a gastroptosis, may present a similar absence of physical signs, with an exactly similar ulcer history. Likewise tabes dorsalis may produce recurring gastric attacks closely simulating those of ulcer, with entirely negative findings over the abdomen on physical examination.

ANALYSIS OF STOMACH CONTENTS

In times past, all clinicians have depended much for diagnosis on the analysis of the stomach contents. The characteristic finding was hyperacidity; and when this was proved to exist, after a typical history had been

* Read before the San Francisco County Medical Society, April 8, 1919.

elicited and a tender spot in the epigastrium had been found, the last bit of evidence was supposed to have been adduced to justify a diagnosis of ulcer. It is true, on the one hand, that ulcer is most often associated with hyperchlorhydria, although it may be found with acidity within normal limits or even below normal. But hyperacidity, on the other hand, may be associated with numerous other conditions besides ulcer. And so the old diagnostic combination of characteristic history, negative physical findings, and stomach contents showing hyperacidity can no longer be depended on. A conclusion based on these data alone used to lead us constantly into error, and would do so still, if we had no other aid in reaching the truth.

VALUE OF FLUOROSCOPY AND ROENTGENOSCOPY

Fortunately we have now another method of obtaining information, namely, by fluoroscopic examination and by roentgenograms of the gastro-intestinal tract. This mode of investigation has gradually developed during the past decade until now it has become indispensable; and in no case of suspected ulcer should a conclusion be reached without its aid. The information thus obtained about the outlines of the stomach and the duodenal cap, the rate of peristalsis and the emptying time of the stomach, adds demonstration to inference and either confirms or disproves the suspicion aroused by history, physical examination and analysis of stomach contents. We have learned, if no evidence of ulcer appears from the roentgenographic examination, to distrust all the other evidence, no matter how convincing it appears. On the other hand, apparent defects in the outlines of the pylorus or the duodenal cap, suggesting the presence of ulcer, should not be interpreted as positive proof unless other evidences coexist, in history and stomach analysis. This whole question of the results obtained by gastro-intestinal roentgenographic examinations is a very serious one for the clinician; for no man can devote his time both to clinical investigation and to roentgenographic technic without doing injustice to one or the other; and as a consequence each part of the work ought to be entrusted to a specialist in his own line. It is well known that improper technic may easily cause defects to appear in roentgenograms that do not really exist in the body, and the roentgen-ray technician must know how to avoid these and how to interpret what the plates show. He must be willing to repeat examinations to confirm dubious results, and not too ready to furnish a diagnosis from his findings alone. What the clinician wants is roentgenographic evidence, not roentgenographic diagnosis. This evidence is of great value, but only when taken in connection with that obtained by other methods previously described. Taken alone, it is worse than worthless, because it is misleading and confusing.

OTHER CONDITIONS PRODUCING SYMPTOMS RESEMBLING ULCERS

The question next arises, What other conditions may produce symptoms and signs resembling those of ulcer, and how are we to avoid mistaking one for the other? It is surprising how many times we find now, with our increased facilities for study, what we suspected to be ulcer proves to be something else altogether; but, on the other hand, we know with greater certainty when ulcer does exist and we make fewer errors in its recognition than we used to make.

1. *Chronic Appendicitis.*—This deserves first place when we consider the conditions that simulate ulcer, because it often leads to hyperchlorhydria and so to the typical ulcer history. So far as we know, anything that delays the emptying of the stomach results in hyperacid secretion, and in chronic appendicitis it is a reflex pylorospasm that produces this result. From the history alone, it is often absolutely impossible to decide that ulcer is not the cause of the stomach symptoms that follow. The patient's attention is directed to the stomach, and of this alone he complains. Yet if questioned closely, he may recall intestinal upsets at times in addition to the stomach trouble, such as occasional attacks of cramps and diarrhea, attributed to some improper food or to "ptomain poisoning." He may even recall periods when for days at a time he felt sore and tender in the right lower abdomen. His history is frequently one of chronic constipation and of repeated resort to cathartics, especially when his stomach condition is worst. In all these details we get a clue to the possible existence of trouble in the appendix, even before physical examination is made. Of course, if definite tenderness and rigidity and muscle spasm, and a palpable thickening are found over the appendix, this organ will be suspected as the cause of the stomach complaints. But so often the signs are vague and indefinite in this area, especially with the so-called obliterative appendicitis, that they may be overlooked on repeated examinations and by the best observers, and the real cause of the stomach symptoms will be assumed to be in the stomach itself, particularly after gastric analysis reveals a high grade hyperchlorhydria. But if in such a case the roentgenographic report is negative as regards ulcer, that diagnosis must certainly be reconsidered; and if, on fluoroscopic examination, it is equally positive as regards tenderness at the appendix site, delay in the cecum or in the appendix itself, with evidence of fixation of the cecum to the abdominal wall, then the diagnosis of chronic appendicitis can be reached with sufficient certainty to justify surgical procedure. There seems no excuse these days for the old error, so frequently made, of an operation for ulcer, resulting in the discovery of no ulcer present, followed by a second incision over the appendix for its removal. It is always possible to decide this question in advance, before the case is sent to the surgeon, if only sufficient care is taken to get all the evidence together, and sufficient judgment is exercised as to what the evidence means.

2. *Chronic Cholecystitis.*—Not all chronic inflammation of the appendix simulates ulcer, nor does all chronic inflammation of the gallbladder, but only those groups of cases in which hyperchlorhydria is present and the chief complaint is of the stomach. In gallbladder disease, as in appendix disease, this group is a large one; and the patient's story is so persistently made up of the symptoms characteristic of ulcer that it frequently misleads. In addition to these symptoms, however, there is another set in the background, comprising occasional attacks of soreness and pain in the right side at the costal margin, a sense of fulness and distention there as if something was in the way, a feeling of lameness and stiffness on movements of the body involving that side. If these attacks develop into sharp paroxysms of colic, with transient jaundice, they seldom fail to be remembered; but lesser manifestations may be withheld from the patient's history, so intent is he on relating his stomach disturbances and

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3. *Gastroptosis.*—We owe to roentgenographic evidence our discovery of the frequency with which prolapse of the stomach occurs. It is true that this faulty position does not always cause symptoms and may exist without giving rise to any complaint whatever on the patient's part. It is also true that its manifestations, when they do occur, are of several different types. But there is undoubtedly one large group of gastroptosis cases that closely resembles ulcer. This is because of the hyperchlorhydria that results from the faulty position. The explanation for this hyperacidity lies, as always, in the delay in emptying of the stomach, probably because of the drag on the attachment of the duodenum, which cannot descend freely with the stomach, even though the greater curvature lies below the pelvic brim. The highest degrees of hyperchlorhydria are frequently found with this condition, and the consequence is a history corresponding closely with that of gastric ulcer, in no way to be distinguished from it. Physical examination is absolutely negative as regards the stomach and abdomen, except for the discovery of a prolapsed right kidney which frequently occurs coincidently with the gastroptosis, and except after the old method of inflation of the stomach with carbon dioxid, which shows the stomach outlines abnormally low but never with the same accuracy as demonstrated by the fluoroscope or the roentgenogram. This absence of any signs on physical examination, except for epigastric tenderness, which is as common in one case of hyperchlorhydria as in another, is of course one of the characteristics of ulcer. As regards the roentgenographic evidence, it excludes ulcer, on the one hand, no matter how firm our preconceived notion of the case, formed from history, physical examination and analysis of gastric contents; and it demonstrates gastroptosis, on the other hand, more definitely than any other method can. While there are differences of opinion as to how low in the abdomen the stomach may normally be found, there seems to be agreement that a greater curvature lying below the level of the iliac crests constitutes an undoubted abnormality. Symptoms may arise, however, even with lesser degrees of prolapse, and this fact must be remembered. The therapeutic test confirms the diagnosis, for a properly fitted abdominal support, holding up the stomach, brings relief gradually of all symptoms. It is significant that in former days of less accurate diagnosis, the classical treatment for ulcer has always been prolonged rest in bed and a diet of milk and cream that increased weight. This treatment today is just as effectual for gastroptosis, for the rest in bed and increase in abdominal fat restore the stomach somewhere near its normal position, even without external support. Possibly some of the cases formerly called ulcer and cured by routine treatment were really gastroptosis.

4. *Gastric Cancer.*—Usually the history in cancer is entirely different from that in ulcer, as regards shorter duration of symptoms, their persistence without intermission, and their character. But not infrequently cancer occurs on an ulcer base, and the history then becomes confusing and no longer characteristic. Symptoms may have persisted for years, with intervals of comparative good health between attacks, and the details of these former symptoms may correspond in every respect to those of ulcer. But when cancer develops, the story is of a change in the manifestations; the pain becomes more constant; food is not desired; soda and other remedies, as well as food itself, no longer give relief; taking food causes distress at once, with no interval of comfort following; and the patient loses in weight and color as in no previous ulcer attack. Physical examination now may show definitely a tumor in the upper abdomen. Its presence, as already stated, is always to be looked on with suspicion; though its absence does not exclude cancer, because it may be concealed and out of reach.

The characteristic stomach contents in cancer are usually altogether different from those in ulcer; with poor trituration of the test meal, and complete absence or great decrease of free hydrochloric acid. But when cancer has developed as a sequel of ulcer, the secretion of hydrochloric acid may continue to such an extent that the amount is normal or only moderately subnormal for some time after malignant degeneration has taken place. Finally, whether or not a palpable tumor has been found, the roentgenograms will show its presence or absence and its site, if present. The appearance of the filling defect in cancer is usually different from that in ulcer, so that a conclusion can be reached as to its meaning; but in making a diagnonsis, the data elicited by history, physical examination and gastric analysis must all be taken into account, as well as the roentgenographic findings; and in case doubt still exists, it is wiser to advise exploratory operation without too much delay.

5. *Other Intra-Abdominal Pathologic Considerations.*—There are other conditions that now and then give a history closely resembling that of ulcer because they produce hyperchlorhydria; but they can usually be recognized and differentiated if only care enough is observed in collecting the data. Such, for instance, are intestinal parasites, especially tapeworm, which can never be missed, however, if the stools are examined for segments and ova. Small hernias due to defects in the abdominal wall, around the umbilicus or along the linea alba above it, may reflexly cause hyperchlorhydria and its usual train of symptoms; but such protrusions, even though very slight, can be found if

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search is made for them. The absence of other physical signs and the negative findings in roentgenograms prove that other cause does not exist for the history; and correction of these defects, with prevention of further intestinal or omental pinching, removes the gastric symptoms. Chronic pelvic inflammatory disease in women, and old adhesions involving the intestinal wall in a former peritonitis, are other conditions that at times may simulate ulcer in the way described. Pelvic examination, giving direct or positive evidence, and roentgenograms giving indirect or negative evidence, call attention to the site of the real pathologic condition.

6. *Gastric Crises.*—The hardest lesson to learn about abdominal disease is that of "gastric crises," due to no disease within the abdomen itself, but to disease in the spinal cord. These crises come at irregular intervals, weeks or months apart, with good health between. They last for days or weeks, and the attacks are characterized by intense pain and by vomiting, so that the patient fears to take food and cannot keep it if he does. No wonder the first thought with such a history is of some disease of the stomach; and commonly of ulcer as corresponding most closely in its manifestations. The physical examination of the abdomen is negative in such case; and the stomach contents most often show hyperchlorhydria after an attack is over. It is not surprising, therefore, if such symptoms have in the past misled us, even to the point of advising a gastro-enterostomy to prevent their repetition. Now, however, the negative roentgenographic findings come to our rescue, to save us from error; and at all times, even without roentgenograms, we have other definite signs to point out the real disease, if only we take the trouble to look for them. First, these signs consist in alteration of reflexes, in one pupil or both; in patellar or Achilles tendons, perhaps only on one side; or in the plantar reactions to stimuli. Second, and most important, lumbar puncture and examination of spinal fluid for cell count and Wassermann reaction afford the most constant clue to the real disease present.

Gastric Neuroses.—These are still mentioned in the textbooks, in the differential diagnosis of ulcer, but their existence outside of textbooks must be considered very dubious. A history resembling that of ulcer, with hyperchlorhydria, does not occur without some pathologic condition somewhere in the body, usually in the abdomen, to explain it. In times past this "acid dyspepsia" has been considered as a possible result of a disturbance of the nervous system only; but such a supposition, with our increased facilities for eliciting facts, is no longer tenable. The exact cause of the clinical picture may not always be obvious, but one always exists, and careful search will sooner or later reveal it.

CONCLUSIONS

We have heretofore been too ready to diagnose ulcer, when it did not exist, because the history was typical; but now we have learned how many other conditions may simulate this history, and we demand other data in addition to the patient's story. On the other hand, when the history was not typical, ulcer was not suggested by it and we were likely to overlook its existence because our other means of recognition were so meager. Now we have learned that the patient's story of his ailment is not always the same; that some feel less discomfort from an ulcer than others do; and that only a part of the classical symptoms may be present, even when hyperchlorhydria is found and roentgenograms show definitely a pyloric defect or a deformed cap. The only way to avoid error, therefore, is to trust to no one element in the diagnosis; but to collect our data by history, by physical examination, by laboratory reports, and by fluoroscopic examinations and roentgenograms; and then to piece these data together as a child does the parts of a picture-puzzle, to see what they will ultimately make. Fifty years ago Thomas Huxley wrote:

> Sit down humbly before facts as a little child, be prepared to give up every preconceived notion, follow humbly wherever and to whatever abyss nature leads, or you shall learn nothing. I have only begun to learn content and peace of mind since I have resolved at all costs to do this.

THEORIES REGARDING BLOOD PRESSURE

HAROLD W. DANA, M.D.

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BOSTON

For a number of years, there have appeared from time to time books by various authors purporting to give to the reader a complete understanding of blood pressure, the causation and the measuring of changes in the various factors, and the blood-pressure conditions to be found in all diseases. Independent observers have also put forth formulas for the determination, by means of blood-pressure estimation, of cardiac efficiency.

Recently I have had the opportunity of studying blood-pressure findings in a large number of army officers and candidates for commissions in the army, chiefly in men over 30 years of age, medical officers being in a large majority. I am not here presenting statistics as to the distribution of these cases among different age periods, or as to the classifying of the blood-pressure readings obtained; for, while these figures might be of interest, it does not seem to me that such statistics help us to understand the conditions presented by the individual. What I wish to do is to point out some of the conditions met in this mass of material, to discuss the interpretation of the findings, and to suggest a new point of study in the analysis of blood pressures.

Most of the medical officers examined came to camp from a considerable distance, and were examined the day after their arrival, without opportunity for rest after the long journey. Being physicians, they were almost universally very nervous over the ordeal of the examination. Most of them were naturally constipated, and this constipation was increased by the journey, by the change of routine, and by the change in diet. To many, sleep under camp conditions was at first difficult. From all of these causes, it was not surprising that a large number of the candidates showed an elevation of the systolic blood pressure. In a great majority of such cases, however, rest, catharsis, and the fact of becoming accustomed to the new routine of life, soon brought the blood pressure down to within normal limits. It served to demonstrate in a very striking way the effect of overwork, nervous strain, psychic stimulation, and constipation, in raising blood pressure.

One fact that impressed me particularly is the frequency with which one meets a familial hypertension. Such a condition of continued elevated systolic pressure, in which most members of particular families share, the tendency apparently being hereditary, does not seem in such families to cause invalidism or to shorten life. Indeed, it has seemed to me that many such individuals with a sustained hypertension continue to have better than normal health and robustness; and that the hypertension, if it were not actually the cause of this, at least went hand in hand with their abundance of strength.

With a superabundance of energy and an abnormal vitality, one physician, 48 years old, 6 feet tall, weighing 190 pounds, hard as nails and the picture of health, had a constant systolic pressure of 190 to 200, with a diastolic of 110 to 120. He told me that his father was over 80 years of age, vigorous and active, in spite of a systolic pressure that had been around 200 mm. for years. The officer in question and his brother, three years his senior, had each of them presented similar pressures for years, yet had had the best of health. This officer showed a negative urine, a normal heart, no thickening of the peripheral arteries, and normal eye grounds.

Such a condition shakes our faith in any preconceived standard for normal systolic pressures. These familial hypertension cases as a general thing, in my opinion, can be accepted as representing to all intents, and for that particular family, a condition free from serious organic disease. Another type in which there is difficulty in setting down a standard for normal blood pressure is the case in which the hypertension is compensatory to renal or arterial disease. In this general category come those cases in men of 50 years or over in which the blood pressure has assumed a probably normal and physiologic elevation. Taken by and large, our conception as to what represents an unduly high systolic blood pressure in a given individual must take a good many facts into consideration, must be highly individualized, and must have considerable latitude, both as to the standard accepted and the interpretation to be placed on deviation from the standard.

Certainly I am not at all willing to concede that a high blood pressure, for example, 200 mm., means necessarily any of the things that we have always agreed that it did mean. It does not seem to me a proved fact that marked hypertension necessarily causes apoplexy; that it necessarily increases the probability of apoplexy, or of renal or arterial disease, or of ill health of any kind. If marked hypertension means of a certainty any of these things, why do some men live to far beyond the average age, in spite of continued marked hypertension of long duration? Granted that some pathologic condition would have been found present after death in these cases; granted that signs of nephritis or of arterial degeneration might have been present, proof is still lacking that the hypertension was the result of the lesions found; for, after all, if there were not some cause for the termination of life, these fortunate beings would have lived forever; and in my opinion any man who enjoys reasonably good health and an active life—as many men with marked, continued hypertension do—until past 75 or 80 years comes to his final end for the reason that his body is not immortal and is constructed to last for only seventy years or thereabouts.

Why is it that a considerable proportion of men with sclerosis of the peripheral vessels have a normal blood pressure, and that in a similar proportion of cases of hypertension there are soft radial arteries? Is it not true that we are putting undue weight on the occasional coincidence of hypertension and arteriosclerosis?

We have had certain standards set down for us by the pioneers in sphygmomanometry, most of which we have accepted blindly. Unfortunately, there has been little opportunity for exact observation correlating physiology and pathology along this line, and it seems to me that most of the supposed facts of blood pressure that we accept are still open to proof and subject to doubt.

Probably we can accept without serious question that the systolic pressure represents the point at which sounds are first heard with the stethoscope over the cubital fossa when the pressure in the cuff is dropping, and that the diastolic pressure is the lowest point at which these sounds pass their maximum, that is, the beginning of the "fourth phase."

What does the systolic pressure represent? We have been taught that a constant high systolic pressure indicates a permanent change in the capillaries, particularly the renal capillaries. Yet, if such be the case, why is it a fact that some patients with high systolic pressure may have their blood pressure lowered and kept at a normal level by repeated treatments, either with high frequency currents or with radium emanations internally? Incidentally, I would point to this influence of the high frequency currents or radium emanations on blood pressure, through their action on metabolism, presumably in oxidizing or otherwise destroying toxic products in the body, as supporting my theories as to the causes of individual blood-pressure readings. If there is actual change in the renal circulation, of such a nature that the capillaries can no longer dilate, then it must be a fact that an increase in systolic pressure is necessary to drive the blood through the kidneys. But it is a fact that many patients with contracted kidneys and high systolic pressure may be freed from symptoms for years and have a blood pressure normal for their age, as the result of treatment. This, to my mind, is explained by the theory that the systolic pressure, while a measure of peripheral resistance, and as such, a compensatory mechanism in these cases, is not the result of permanent changes in the renal capillaries, but is the effect of vasoconstriction, due to toxins circulating in the blood. Many cases of acute focal infection give rise to a temporarily increased systolic pressure, to be accounted for in the same way.

Similarly, many cases of hyperthyroidism present an elevated blood pressure. The effect of nicotin in raising systolic pressure is well known. It has been demonstrated to my satisfaction that the presence of constipation causes a rise in blood pressure. To my mind, there is a definite syndrome of slight cyanosis, increased aortic second sound, and increased blood pressure, that goes with many cases of intestinal stasis. Furthermore, I am certain that many persons leading a sedentary life can have daily bowel movements and still be constipated.

My argument is, that the systolic blood pressure is maintained by vasoconstricting substances in the circulating blood, and that an abnormally high blood pressure indicates that the blood stream contains either

toxic substances (whether unexcreted products of metabolism or of focal purulent processes) or an excessive amount of the vasoconstricting secretion of particular glands of internal secretion. The functional test of cardiac efficiency suggested by the observation of Graupner[1] that when a man has been put through a certain amount of exercise, and when following this his pulse rate has returned to normal, his systolic blood pressure as a rule rises, would seem to me to be better explained by the theory that there was an increase in the amount of vasoconstricting internal secretion, liberated perhaps by the thyroid or suprarenal glands as a result of the increased circulation following exercise, rather than on the basis of the condition of the heart muscle.

In further support of this argument is the condition that one finds present in many cases of small-lunged emphysema, usually with chronic bronchitis and asthma. In many cases there is present a constant hypotension. Certainly some patients with severe bronchial asthma are much benefited by repeated administration of epinephrin. While as yet I have had no opportunity of working out my theory along this line, the known facts would seem to favor the existence in such asthmatics of a deficient secretion of vasoconstricting substances.

With regard to the meaning of the diastolic blood pressure, I feel that our present conceptions are even more wide of the mark. Observers in general feel that the diastolic pressure represents the power of the heart to maintain the circulation. In aortic regurgitation, in hyperthyroidism, and in "irritable heart of soldiers," we may have a greatly lowered diastolic pressure without necessarily any actual failure of the muscle power of the heart. Many clinicians feel that a diastolic pressure above 100 mm. indicates a myocardial defect. With this point of view I cannot agree. I believe, as do many others, that a systolic blood pressure of 150 or 160 mm. may be normal for a man 50 years old. To my mind, the ratio 2:3 for the diastolic and systolic pressures, respectively, should be maintained by the normal heart regardless of the rise or fall of pressure; and with a pressure of 160 mm. systolic, I believe that an intact circulation would show a diastolic pressure of from 105 to 110 mm. The relatively lowered diastolic pressure in thyrotoxicosis and in "effort syndrome" may perhaps be explained either as a vice of internal secretion, or perhaps in the case of "effort syndrome," as the result of intestinal stasis. In aortic regurgitation we may perhaps explain the low diastolic pressure as due to fatigue either of the vasoconstrictor centers or of the vasoconstrictor muscles. However, the explanation of the blood-pressure phenomena in aortic regurgitation seems more difficult than under the other conditions; it is a condition set off by itself, in which no rule seems to hold good. So far as any theory may be formed regarding aortic regurgitation, this condition helps merely to throw doubt on all other theories as to the significance and causation of changes in the diastolic pressure.

The more I study blood pressure, the less sure I become of any of the accepted interpretations regarding the test. Certainly, while I have as much respect for blood-pressure readings as ever, I feel that we must get a new conception as to the factors influencing the readings.

1. Graupner: Berl. klin. Wchnschr. p. 174, 1902; Deutsch. med. Wchnschr. p. 1029, 1906.

CONCLUSIONS

1. It is believed that increased systolic blood pressures indicate the presence in the circulating blood either of unexcreted putrefactive products absorbed from the intestine, from the kidneys, from focal infections in the dental alveoli, the nasal sinuses, the tonsils, the genito-urinary tract, or of secretions in abnormal amounts from the glands of internal secretion.

2. It is believed that in some cases at least, a lowered systolic blood pressure indicates a defective secretion of pressor substances, or an increased secretion of depressor substances by the ductless glands.

3. It is believed that the diastolic pressure, when it fails to conform to its normal ratio with the systolic pressure, is also influenced by abnormal products of metabolism or by abnormal amounts of ductless gland secretion in the blood stream.

4. It is not believed that either the systolic or the diastolic blood pressure gives any certain indication as to the condition of the cardiovascular renal system as such; and that when changes in the vascular system are accompanied by hypertension, neither condition is secondary to the other, both being held to be secondary to the presence of unexcreted toxic products of metabolism in the circulating blood.

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A HOSPITAL EPIDEMIC OF STREPTOCOCCIC SORE THROAT WITH SURGICAL COMPLICATIONS

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The object of this report is to call attention to an unusual epidemic of throat infection in the surgical wards of a hospital, caused by a peculiar hemolytic streptococcus and sharply differentiated from the streptococcus bronchitis and bronchopneumonia which assumed epidemic proportions during the winter of 1917-1918 and has been present to a less extent during the winter of 1918-1919.

PREVIOUS EPIDEMICS

Streptococcic sore throat, septic sore throat, epidemic sore throat and milk-borne sore throat are terms used synonymously to denote the type of epidemic disease here described. The first description of a similar disease in the United States was that of an outbreak in eastern Massachusetts in May, 1911,[1] although in England writers had recognized and reported outbreaks previously.[2] Further outbreaks in the United States were reported from Chicago in December and January, 1911-1912,[3] and from Baltimore in February, 1912.[4] All of these epidemics were attributed to an

1. Winslow, C. E. A.: An Outbreak of Tonsillitis or Septic Sore Throat in Eastern Massacusetts and Its Relation to an Infected Milk Supply, J. Infect. Dis. **10**: 73 (July) 1912.

2. Pierce, W. C.: Outbreak of Septic Sore Throat Due to Infected Milk, J. State Med. **12**: 595, 1904. Chalmers, A. K.: An Outbreak of Sore Throat Among the Staff of Belvidere Hospital, Which Coincided with the Occurrence of a Teat Eruption in the Herd Supplying the Milk, Pub. Health **16**: 769, 1904. Savage, W. G.: Outbreak of Sore Throat at Colchester Due to Infected Milk, Pub. Health **18**: 1, 1905.

3. Davis, D. J., and Rosenow, E. C.: An Epidemic of Sore Throat Due to a Peculiar Streptococcus, J. A. M. A. **58**: 773 (March 16) 1912. Capps, J. A., and Miller, J. L.: The Chicago Epidemic of Streptococcus Sore Throat and Its Relation to the Milk-Supply, J. A. M. A. **58**: 1848 (June 15) 1912.

4. Hamburger, L. P.: An Epidemic of Septic Sore Throat in Baltimore and Its Relation to a Milk-Supply, J. A. M. A. **58**: 1109 (April 13) 1912.

infected milk supply, on fairly strong circumstantial evidence, and at the present time it seems to be generally accepted that this is the principal, if not the only, means of spread of this disease.

SURGICAL PROBLEM

The present epidemic at the U. S. Naval Hospital, Chelsea, Mass., first came to attention on account of the numerous instances of postoperative rise of temperature in clean surgical cases and the too frequent deep infection of the wounds with a peculiar hemolytic streptococcus. At first, operating-room infection was suspected, but cultures from the throats and the hands of the operating-room staff were negative for hemolytic streptococci, as were cultures from catgut and clean wounds before closure. Ward surface infection of the wounds was excluded because most of the infected cases had a primarily clean, well closed incision, and the operating-room dressing had not been touched before discovery of the infection.

More careful analysis of the surgical case histories showed that every case of wound infection with this peculiar hemolytic streptococcus was preceded for two, three or four days by a sore throat and a sudden rise of temperature, with normal or nearly normal temperature up to the time of the appearance of the wound symptoms. The throat infection occurred usually a day or two after operation, sometimes longer. The temperature became normal in a day or two. It was also noted that patients that entered the surgical wards for simple hernia or varicocele operation sometimes developed this sore throat and rise in temperature before operation. From the throats of these patients, the same peculiar hemolytic streptococcus was constantly recovered almost in pure culture on blood agar plates, as found later in the wound infection.

When, after all possible precautions had been taken to eliminate operating-room contamination, there was a continuance of wound infection in the surgical wards, it was concluded that it must be due to a metastatic blood infection from the primary pharyngeal and tonsillar lesion.

At the same time that infections were occurring in the general surgical wards, or even earlier, there was a similar difficulty in the nose and throat surgical wards. It seemed that fully half of the uncomplicated septum and tonsil operations were being followed in one or two days by a sudden rise of temperature associated with sore throat, or occasionally an erysipelas, sinus or ear infection. From these infections the same type of hemolytic streptococcus was recovered as found in the general surgical wards.

So serious had the situation become in the surgical service that all operations, except emergencies, were suspended, in order to investigate the cause and ascertain the means of control of the too frequent surgical complications caused by the hemolytic streptococcus. This investigation disclosed that there was a true epidemic of streptococcic sore throat in several of the wards of the hospital. The distribution of the cases was distinctinctly localized in wards which were related either to the primary acute throat wards or to the surgical wards, these being more particularly the influenza wards to which acute throat patients were sometimes admitted on undetermined diagnoses, and convalescent surgical wards fed from the surgical wards in which the epidemic was first recognized. In one convalescent surgical ward of about thirty patients, six new cases were found at one evening inspection, all presenting a rather serious condition with symptoms very suggestive of an outbreak of influenza, all of which patients later developed very severe and typical throats. In addition to these ward epidemics, several cases developed among the hospital corpsmen, both from the infected wards and from other wards, the latter being evident contacts with the former in the corpsmen quarters and tending to spread the epidemic over the entire hospital.

SYMPTOMS

The subjective symptoms of the most typical cases at the height of the epidemic were quite constant and severe. As accurately as could be determined, the period of incubation was two or three days, this judgment being based on the earliest cases developing in new men entering the hospital. Usually there were prodromal symptoms a few hours before the acute onset of the fever. These were an indefinite feeling of malaise and a loss of appetite, for which a laxative frequently was requested. The temperature was taken without showing any rise. Frequently during this period a beginning localization in the throat was noted —a slight dryness and soreness. The onset of fever was sudden and accompanied by alternating warm and chilly sensations, sometimes a distinct chill, dizziness, prostration, very severe frontal headache, a slight stiffness and soreness of the neck, and mild back, muscle and joint aching. Thus far the onset was typical only of the onset of any severe acute infectious disease, and particularly liable to be confused with influenza during an epidemic.

Within twelve hours, however, localizing symptoms appeared that clearly differentiated the disease from influenza. The throat became very sore so that swallowing was painful and there was a tendency to expectoration of mucus and saliva. Occasionally this sputum was blood-stained from pharyngeal hemorrhages. Very soon after the development of the throat symptoms, within one or two days from the onset, the systemic symptoms largely disappeared, with a coincident drop in the temperature, so that the patient felt fairly comfortable except for the fact that the throat remained very sore and swollen.

The objective localizing symptoms related entirely to the pharyngeal lesion. At the onset the throat was not characteristic. There was a general vascular injection of the lateral and posterior pharyngeal walls, sometimes described as a beefy red throat, with not much swelling or exudate. This condition gave the dry, slightly sore feeling noted, and can be found in the onset of almost every acute infectious disease. The tenderness at onset was usually more noticeable than in the onset of influenza, thus indicating early the site of the characteristic local lesion. Very rapidly, within twelve to twenty-four hours, this local lesion appeared. It consisted of a swollen, very dark red, lateral, pharyngeal and tonsillar region, with a beginning thin, grayish-white, slimy exudate over the crypts of the tonsils. In the absence or the fibrotic condition of the tonsils, the lymphoid tissue of the lateral, posterior and nasopharyngeal walls was involved, with less evident exudate. All grades of local lesion were present, from a simple injected pharynx with rapid return to normal, to an extremely swollen and painful condition of the tonsils, covered over entirely with a slimy, grayish membrane suggesting diphtheria, or the crypts

and supratonsillar fossa may form foci of ulceration sometimes coalescing into large ulcers covered with a dirty, yellowish-white membrane very similar to the so-called Vincent's angina.

CLINICAL CHART AND BLOOD PICTURE

The temperature curve is not especially characteristic. In typical severe cases it mounts from normal to 104 F. within an hour or two, remaining high one or two days and returning to normal within a similar period. The recovery from systemic symptoms is even more rapid than the drop in the temperature, thus differentiating the disease from influenza. Another feature quite characteristic of this epidemic streptococcic sore throat is the frequent relapse or recurrence of symptoms and fever, occasionally two or more times, at intervals of from two to five days.

The leukocyte count is generally above normal, between 10,000 and 15,000. This is a valuable point of differentiation from influenza at the onset, for in influenza there is almost constantly a distinct leukopenia. However, this rule of differentiation is not absolute, for occasionally at the onset of toxic symptoms of streptococcic sore throat there is a distinct leukopenia, total leukocyte counts as low as 4,000 being obtained. This is quickly followed by the characteristic moderate leukocytosis with no significant variation of the differential count from normal. This primary leukopenia may be of more constant occurrence than is disclosed by routine leukocyte counts on these patients, for it is rare to obtain a count before the secondary throat lesion is well advanced. The interpretation of this initial leukopenia is that it represents a bacterial anaphylactic reaction from the increasing local or general destruction of streptococci. The primary symptoms of onset are indistinguishable from those of a great number of acute infectious diseases. The specific and characteristic reaction of streptococcic sore throat, as of all acute infectious diseases, is dependent on the nature and site of the local process developing subsequent to and as a result of the primary bacterial anaphylactic reaction. In streptococcic sore throat the secondary lesion is located in the pharyngeal and tonsillar lymphoid tissue. The primary site of invasion is in all probability in the same region.

BACTERIOLOGIC FINDINGS

The hemolytic streptococcus constantly recovered, almost in pure culture from these sore throats, and in pure culture from the surgical infections under discussion, had definite unusual cultural characteristics. The colonies on the surface of blood agar (10 per cent. defibrinated sheep's blood in plain agar) were large and moist, having the clear appearance of a drop of water, or with a slightly opaque or cloudy center as drying proceeded. The hemolysis was not marked, nor was there a sharply defined outer border, this extending very little beyond the outer border of the colony at the end of twenty-four hours' growth. In the first culture from two or three cases of wound infection and from a few very severe throats there was little or no hemolysis at the end of twenty-four hours, the growth appearing merely as perfectly clear droplets of water with a tendency to confluence. Longer growth and subcultures from these showed a more distinct hemolysis and less moist colonies. On drying, these moist colonies flattened out to a thin layer on the surface of the blood agar, sometimes showing radial lines or concentric rings.

Cultures in glucose bouillon gave at first a uniform turbidity, but within forty-eight hours there was noted a tendency of the growth to accumulate at the sides and bottom of the test tube, with final settling and partial clearing of the supernatant fluid.

Smears from the throat showed numerous pus cells and flattened or spherical gram-positive diplococci with few chains of more than two or three diplococci. Capsule stain gave a suggestion of a narrow capsule, but not more than can be obtained on numerous organisms in an albuminous exudate. Smears from the moist colonies on blood agar showed large spheric, gram-positive diplococci in short chains. The capsule stain gave no definite capsule, but a wide albuminous envelop of greater density near the diplococcus. In bouillon cultures, short chains were formed. These streptococci were not soluble in bile, and did not ferment inulin or mannite in Hiss' serum water mediums. They gave a distinct acid reaction in glucose, maltose and galactose, a slightly acid reaction in lactose, and a questionably acid reaction in saccharose and dextrin. Coagulation occurred in none of the tubes after ten days' growth. They differed from the ordinary *Streptococcus pyogenes* and the lung streptococci only in cultural characteristics, the latter growing in smaller, dry, white, granular colonies on blood agar, and in bouillon as a flocculent sediment forming long chains.

This description of the hemolytic streptococcus found in this epidemic of sore throat appears to agree in every way with that of the writers previously referred to in studies of earlier epidemics.

In several cases of streptococcic sort throat developing in the hospital, throat cultures were taken the day preceding the onset of toxic symptoms, with negative results for hemolytic streptococci. In a few cases, throat cultures taken at the onset of symptoms were negative, with typical positive cultures obtained on succeeding days. One case in particular deserves special description to indicate the possibility of typical toxic symptoms and positive throat culture but with negative throat symptoms:

> A routine throat culture of a convalescent patient ready to go to duty was taken, March 3, and was negative for hemolytic streptococci. On the evening of March 4, he felt a little indisposed, with no rise of temperature. The following morning at 8 o'clock he felt distinctly ill, with slight headache; but the temperature was still normal. At 10 a. m. he had a sudden, fairly severe chill, with sweating, prostration and very severe frontal headache, but no other aches nor pains and no discomfort nor symptoms in the nose or throat. The pharyngeal wall appeared injected, but there was no exudate. A few blood clots were blown out of the nose. The temperature by noon was 104 F.; leukocyte count, 5,000 Throat culture taken in the afternoon gave a pure growth of the characteristic moist hemolytic streptococcus. At no time was there any throat pain or discomfort, or any exudate. A mild relapse occurred four days later.

Blood cultures were taken in ten cases at various periods of the infection from the onset to five days following, with negative results. It is well established, however, from previous, more severe epidemics, that there is frequently, if not constantly, a blood invasion by the streptococci from the throat. Clinically this has been evidenced by the complications, such as arthritis, endocarditis, purpura and spontaneous peritonitis, that have occurred in cases. Thus in 173 typical cases of the Chicago epidemic,[5] there were seventeen cases of

5. Capps, J. A., and Miller, J. L. (Footnote 3).

arthritis, three of purpura, five cases of endocarditis, and nine cases of idiopathic peritonitis. Davis and Rosenow[8] state that blood cultures are almost always negative when glandular enlargement is pronounced, but that streptococci may be recovered at the outset of such cases. Also, it has been noted by numerous writers that visceral complications occur most often in the group of cases that have little or no glandular involvement but marked constitutional disturbance.

The evidence of a bacteremia in the cases of the Naval Hospital epidemic, although not furnished by blood cultures, could hardly be more strikingly indicated than by the frequent deep infection of the traumatized tissue of abdominal surgical wounds with the characteristic hemolytic streptococcus, following a similar throat infection of often very mild character.

COMPLICATIONS

The chief and almost constant complication of this epidemic of streptococcic sore throat was tenderness and swelling of the submaxillary and cervical lymph glands. There was no case of suppuration except a peritonsillar abscess in a considerable number of cases. Middle ear and mastoid infection occurred as a direct sequel in six cases, a facial erysipelas in three. An acute arthritis of mild type with no suppuration was present in a few cases.

Relapses, with fever and typical throat lesion, were quite common; in fact, almost characteristic of this disease. They occurred usually three or four days after the complete subsidence of fever and of local symptoms, although positive throat cultures remained.

Deep infection of the surgical wounds was the most alarming complication. This has been discussed in preceding paragraphs.

A most noteworthy feature of the complications was the entire absence of any symptoms of bronchitis or bronchopneumonia in over 100 cases observed. There seemed to be no tendency of the infection to extend below the pharynx, even hoarseness rarely occurring. This fact is significant on account of the frequent statement and the general impression that streptococcus bronchitis and bronchopneumonia begin as a throat infection. At the same time that these cases of streptococcic sore throat were being studied, typical cases of streptococcus bronchitis and bronchopneumonia were being received in the pneumonia wards and almost universally gave a negative history and negative physical findings of a primary throat lesion, the only history obtained being a slight dry or sore feeling usually attributed to coughing. These facts indicate a distinct property of specific primary localization of strains of the hemolytic streptococcus, differentiated with difficulty by cultural or morphologic characteristics, in the one case in the throat with complications related to the adjoining sinuses and lymph glands, in the other case in the bronchi with complications related to the lungs and pleura.

Culturally, morphologically, and by the fermentation reactions these two types of streptococci can be differentiated only by the peculiar moist appearance of the blood agar colonies of the throat streptococci during an epidemic of sore throat. The same characteristics are present to some extent with the lung streptococci in primary cultures, these showing large, moist colonies and the formation of capsular substance in tissue mediums. These particular cultural qualities have been recognized by many writers in relation to these and other pathogenic micro-organisms and have been interpreted as indicating a heightened virulence of the micro-organism, produced by rapid transmission from animal to animal. In repeated subcultures, neither the throat streptococcus nor the lung streptococcus can be differentiated from the ordinary *Streptococcus pyogenes*. Immunity reactions in the hands of other investigators have been little more instructive. However, the distinct characteristics of unusual infectiveness and of specific primary localization of the epidemic throat streptococci and of the epidemic bronchopneumonia streptococci indicate fundamental principles controlling acute infectious diseases.

EPIDEMIOLOGY

From the preceding description I do not believe there can be any doubt that this epidemic of sore throat was identical clinically, pathologically and bacteriologically with the streptococcic sore throat epidemics of 1911 and 1912 in Boston, Chicago and Baltimore. On account of the generally accepted idea that milk contamination was the chief, if not the only, source of infection in these and similar epidemics in the past, it is necessary to analyze the situation at the U. S. Naval Hospital for the possibility of such a source.

The milk supply to the Naval Hospital during the epidemic has been from the Hood's dairy, which supplies all parts of Boston and adjoining cities and is one of the largest and most modern in this section of the country. The milk received at the Naval Hospital is issued to every ward and given to all patients. There are twenty-seven wards averaging thirty beds each, making the census of the hospital about 800. A milk-borne infection would be expected to appear simultaneously in every ward, but this was not the case. The first wards infected were the nose and throat surgical wards and the general surgical wards, all situated in the main permanent brick building. The infection in the nose and throat wards really preceded that in the general surgical wards. The second focus of infection was in the throat infectious wards into which throat patients were entering from the outside and were being transferred from the surgical wards. The next wards infected were the influenza wards, which frequently received early throat cases with undetermined diagnoses, and the convalescent surgical wards, recruiting from the infected surgical wards. All other wards in the hospital were free from throat infection at this time, three weeks after the onset of the epidemic, during which time more than fifty recognized cases had developed. Among these were several hospital corpsmen on duty in the infected wards. From them the epidemic spread to the corpsmen quarters, and from this focus of infection cases began to appear, one or two at a time, in various wards throughout the hospital, and is continuing at the present time in this manner. Several physicians and nurses have contracted the disease.

This manner of spread of the infection indicates contact infection and strongly opposes the idea of milk as the carrier in this epidemic. Cultures of the milk revealed no hemolytic streptococci. The simplest and least artificial explanation of the spread of such an epidemic disease is by contact with infected cases. This is supported by the experimental transmission of the characteristic streptococcic sore throat to volunteers during experiments in the transmission of influenza conducted by the Navy and the Public Health

Departments at Gallops Island, Boston Harbor. This was effected by the direct transfer of throat exudate from patient to volunteer.

The factors determining the infectiveness of a micro-organism in an acute infectious disease are very poorly understood, but it is certain that the mere presence of the hemolytic streptococcus in the throat does not necessarily mean that the case is infective. The infectiveness or virulence in epidemic disease is more probably determined by a combination of anaphylatoxin and pathogenic micro-organisms in the droplet or other vehicle of transmission, to make possible the infection from such a small quantity of material. This has recently been emphasized by Rous, Robertson and Oliver,[6] who found, in trying to develop an antipneumococcus serum in dogs by using an infected tissue antigen, that dogs, although quite resistant to pneumococcus broth cultures extremely virulent to mice, succumbed to a very small amount of tissue or blood from a rabbit in the terminal stages of pneumococcus septicemia.

An analysis of the evidence brought forth in 1911-1912, generally accepted as proving that epidemic streptococcic sore throat is milk-borne, shows that the conclusions were considerably overdrawn and have excluded a considerable amount of evidence which would indicate otherwise. For example, in the Boston epidemic,[1] although circumstantial evidence of milk transmission is fairly conclusive in regard to the epidemics of Back Bay and Cambridge, it is less conclusive in regard to the epidemic of Brookline, and fails completely to explain the epidemics in Hudson, Marlboro and Southboro. Thobald Smith,[7] in a later analysis of seven small epidemics in the region of Boston and investigation of the milk supply supposed to have caused these epidemics, recovered in only one instance in milk a streptococcus comparable to those found in the epidemic, and this from the three normal udders of a cow that had one infected udder. In Chicago,[5] the epidemiologic evidence was more complete, yet milk contamination does not explain satistorily the increase of virulence of a common micro-organism until it is capable of causing severe anaphylactic symptoms and metastatic invasion in the human body. This increase of virulence must have been effected by rapid repeated human transmission, and is hardly conceivable by any form of mastitis in the cow, which would tend to decrease the virulence of a micro-organism as specific in its manifestations as the hemolytic streptococcus of epidemic sore throat. The evidence of milk contamination in the Baltimore epidemic[4] was very meager, hardly more than a supposition seized on by public health authorities to pacify an agitated public.

A complete explanation of the epidemiology of this disease is still lacking. Milk contaminated by an acute case on the morning of its distribution may be a contributing source of some localized epidemics, but the burden of proof certainly rests with those who would be satisfied with this explanation of all epidemics. The claim that such a common carrier as milk or water is necessary to explain the explosive nature of such outbreaks of epidemic disease is reasoning from an unestablished premise and is less easily accepted since our recent experience with influenza. The means of rapid spread in a community of a virus which has become extremely infective are so manifold by direct contact of individuals in present day society that it is rarely possible to have any idea of the source of infection from such ambulatory diseases as influenza and streptococcic sore throat.

6. Rous, Peyton; Robertson, O. H., and Oliver, J.: Experiments on the Production of Specific Antisera for Infections of Unknown Cause, I, Type Experiments with Known Antigen, J. Exper. M. **29**: 283, 1919.
7. Smith, Theobald, and Brown, J. H.: A Study of Streptococci Isolated from Certain Presumably Milk-Borne Epidemics of Tonsillitis, J. M. Res. **21**: 455, 1914.

MEANS OF CONTROL

An epidemic infection of streptococcic sore throat in surgical wards, with metastatic invasion of operation wounds, becomes a much more serious and urgent problem for control than an epidemic of sore throat in a civil community. Immediately on recognition of the serious surgical condition present, all operating, excepting emergency cases, was discontinued and a survey of the surgical wards was made to discover acute cases and carriers of the hemolytic streptococcus, particularly the moist or mucoid hemolytic streptococcus characteristic of this epidemic sore throat. An occasional case of sore throat had been noted previously in the nurses and corpsmen on duty in the surgical wards, for which they had been off duty a day or two, or in some cases not at all. In the surgical wards, numerous carriers of the characteristic moist hemolytic streptocuccus were found; for example, in one ward there were five carriers among two nurses and seven corpsmen, with three additional carriers of the ordinary hemolytic *Streptococcus pyogenes*.

These carriers of hemolytic streptococci were all removed from the surgical service; all throats were observed frequently, and cultures were taken on the least complaint or on the appearance of physical signs. When a new throat case developed among the patients in the wards, the patient was immediately isolated and removed from the ward, if possible. A so-called clean ward was established and most carefully controlled, including all new cases entering the hospital for operation.

After about three weeks' discontinuance of operating, work was resumed again, the control of physicians, nurses, corpsmen and patients for hemolytic streptococci being, however, continued. For a time operations were not performed on any patient showing hemolytic streptococci in the throat on entrance. Later this rule included only those showing the moist colonies. No more postoperative streptococcus infections have occurred, although there are still occasional cases of this characteristic streptococcic sore throat occurring in corpsmen and patients throughout the hospital. Also many new cases have been admitted to the throat wards from outside stations, which shows that the infection is widely spread over the district.

CONCLUSIONS

1. An epidemic of hemolytic streptococcic sore throat has prevailed during February, 1919, at the U. S. Naval Hospital, Chelsea, Mass.

2. This epidemic infection has been comparable in clinical, pathologic and bacteriologic findings with the epidemics of streptococcic sore throat reported in Boston, Chicago and Baltimore in 1911 and 1912.

3. Attention was first called to the presence of an epidemic at the Naval Hospital by the numerous instances of postoperative rise in temperatures in surgical cases, associated with sore throat, and subsequent infection of the primarily clean surgical wounds with a peculiar hemolytic streptococcus.

4. The symptoms of onset of the sore throat were characteristic of acute bacterial anaphylaxis—sudden chilliness, dizziness, fever, headache, backache, general aching and prostration, with occasionally an initial leukopenia.

5. The secondary symptoms localized in the tonsils or lateral pharyngeal walls, with complications referable to the submaxillary and deep cervical lymph glands, the nasal sinuses, the middle ear and mastoid, the face, and by metastatic infection to the surgical wounds and the joints. In no case was there a complicating bronchitis or bronchopneumonia. This stage of the disease was constantly associated with a moderate leukocytosis.

6. The micro-organism constantly recovered in almost pure culture from the throat and the infected wounds was a hemolytic streptococcus, growing in large, moist, droplet-like colonies on blood agar mediums.

7. The hospital epidemic originated in the nose and throat surgical wards, from which it spread by contact to other wards. There was practically no possibility of spread by milk contamination.

8. Control of the epidemic was effected by suspension of all operating for a period of three weeks, immediate isolation of all acute throat cases, and elimination from the surgical service of all carriers of hemolytic streptococci.

AN OLD TIME VICTIM OF AMETROPIA AND A MODERN INSTANCE

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There are numerous references in general literature to instances in which eye affections have hampered distinguished persons in the performance of their labors. Most of these references are to be found in biographies, but, so far as I know, there are few instances of the person afflicted having written an account of his symptoms that would enable an oculist to make a diagnosis, and to prescribe with a reasonable degree of accuracy the remedy that would have restored the patient's eyes to usefulness.

The most interesting case of this kind is in Samuel Pepys' famous Diary. It is generally known that this unique document came to a premature end when its author was but 36 years old, and that the cause that forced him to give up this work was that his eyes gave out completely for close work. But it is known only to attentive readers of the Diary that so detailed is the description of his symptoms that a diagnosis can be made and a good guess ventured as to the remedy that would have enabled him to continue his work.

The story of Pepys' sufferings, as recorded in the Diary, has been so well edited by Mr. D'Arcy Power that I shall quote freely from his article published in Volume I of "Occasional Papers Read by Members of the Samuel Pepys Club, 1903-14." Indeed I have found it quite necessary to make use of Mr. Power's quotations, for a number of them are not contained in my ten volume edition of the Diary, published by Dodd-Mead and Company, 1889.

The first record of any complaint about his eyes is made by Mr. Pepys on Jan. 19, 1663-1664, when he was nearly 30 years old, and had been rather worried by an unreasonable jealousy of his wife. He writes: "I to my office till very late, and be in pain which I never felt to now-adays, which I impute to sitting up late writing and reading by candle-light." Again, on April 1, 1664, he complains: "This day Mrs. Turner did lend me a manuscript of one Mr. Wells, writ long ago, teaching the method of building a ship, which pleases me mightily. I was at it tonight, but durst not stay long at it, I being come to have a great pain and water in my eyes after candle-light." On May 4: "So home to dinner, and after dinner to my office very late till my eyes (which begin to fail me now-adays by candle-light) begin to trouble me." And on the following day: " . . . to the office . . . and thence betimes home, my eyes beginning every day to grow less and less able to bear long reading or writing, though it be by daylight; which I never observed till now." On Oct. 5, 1664, he set about getting some assistance for his sight, for, " . . . then comes Mr, Croker to see me, and I discoursed with him about his writing and ability of sight and how I shall do to get some glasses or other to help my eyes by candle-light; and he tells me he will bringe the helps he hath within a day or two, and show me what he do."

On October 11, there is a memorandum to the effect that: "I had taken my Journal during the fire and the disturbing following in loose papers until this very day, and could not get time to enter them in my book till January 18, in the morning, having made my eyes sore by frequent attempts this winter to do it." On Dec. 13, 1666: " . . . for these three or four days I perceive my overworking of my eyes by candle-light do hurt them as it did last winter, that by day I am well and do get them right, but then after candle-light they begin to be sore and run, so that I intend to get some green spectacles." Three days later: " . . . home by water, and to supper and to read and so to bed, my eyes being better today, and I can not impute it to anything but my being much in the dark tonight, for I plainly find that it is only excess of light that makes my eyes sore." On Christmas eve, he writes: "I do truly find that I have overwrought my eyes, so that now they are become weak and apt to be tired, and all excess of light makes them sore, so that to candle-light I am forced to sit by," adding, "the snow upon the ground all day, my eyes are very bad, and will be worse if not helped, so my Lord Bruncker do advise as a certain cure to use greene spectacles, which I do." Later on the same day: "I this evening did buy me a pair of green spectacles, to see whether they will help my eyes or no. . . . Then home, to my office, and did business till my eyes began to be bad and so home to supper." On New Year's eve he was busy with his accounts, "till my eyes became very sore and ill, and then did give over, and supper and to bed."

Pepys does not again complain of his eyes until April 12, 1667, when: "I close my office all the afternoon getting off of hand my papers which, by the late hollidays and my laziness were grown too many upon my hands, to my great trouble, and therefore at it as late as my eyes would give me leave." April 22: " . . . did business till my eyes were sore again, so home to sing, and to bed, my eyes failing me mightily."

Aug. 3, 1667: " . . . my eyes began to fail me, which now upon very little overworking them they do, which grieves me much." Sunday, August 4: "Busy at my office from morning till night in writing with my own hand fair our large general account of the expense and debt of the Navy, which lasted me until night to do, that I was almost blind." August 19: "I home to supper and to read a little (which I cannot refrain, although I have every reason in the world to favour my eyes, which every day grow worse and worse, by overusing them.") Sept. 4: "At business till twelve at night writing in short hand the draught of a report to make to the King and Council tomorrow. . . . This did finish tonight to the spoiling of my eyes I fear." The next day: "My eyes so bad since last night's straining of them that I am hardly able to see, besides the pain which I have in them."

At the beginning of this winter Pepys took some trouble to get his defective sight improved, for on November 4: "I took a coach and went to Turlington, the great spectacle maker, for advice, who disuades me from using old spectacles. but rather young ones, and so tell me that nothing can wrong

my eyes more than for me to use reading glasses which do magnify much." Mr. Turlington's advice was superlatively wrong, for he was clearly recommending Pepys to use concave glasses when in reality he needed convex ones. It is probable that the spectacles were tried and found unsuitable, for he never bought them, and on the 14th, he writes: "So home to supper and to bed, my eyes being bad again; and by this means the nights nowadays do become very long to me, longer than I can sleep out." In his survey of April, 1668, he says that he is in "some trouble for my friends . . . and more for my eyes, which are daily worse and worse that I dare not read almost anything."

We read no more about the state of Mr. Pepys' eyes for the next six months, until June 20, 1668, when there is an entry: "So we home and there able to do nothing by candlelight, my eyes being now constantly so bad that I must take present advice or be blind. So to supper and to bed." His eyes must have been more than usually painful at this time, for on June 29, nine days later, he writes: " . . . towards St. James', and I stop at Dr. Turberville's and there did receive a direction for some physic, and also a glass of something to drop in my eyes; who gives me hopes that I may do well." On the following day: "Supper about eleven at night; and so after supper, parted, and to bed, my eyes bad, but not worse, only weary with working. But, however, I very melancholy under the fact of my eyes being spoiled and not recovered; for I am come to that I am not able to read out a small letter, and yet my sight good for a little while I can read, as ever they were I think." On July 13: "This morning I was let blood, and did bleed about fourteen ounces, towards curing my eyes." July 31: "The month ends mighty sad with me, my eyes being now past all use almost; and I am mighty hot upon trying the late printed experiment of paper tubes." His eyes were so bad at this time that he made his boy (August 2) "read to me several things, being unable nowadays to read myself anything above two lines together, but my eyes grow weary." August 11 " . . . at the office all the afternoon till night, being mightily pleased with a little trial I have made of the use of a tube-spectacal of paper, tried with my right eye." The result of the trial must have been satisfactory, for on the 12th he went to the play and saw "Macbeth," and "then home, where the women went to making my tubes." But the improvement was not long maintained, as on the 15th: "So home and to my business at the office my eyes had again, and so to bed."

Feb. 16, 1668-1669: " . . . my eyes mighty bad with the light of the candles last night, which was so great as to make my eyes sore all this day, and do teach me a manifest experiment that it is only too much light that do make my eyes sore. Nevertheless, with the help of my tube and being desirous of easing my mind of five or six days journal, I did venture to write it down from ever since this day se'nnight, and think that without hurting my eyes any more than they were before, which was very much, and so home to supper and to bed . . . ." Even at the play house in a good place among the ladies of honour he "was in mighty pain to defend myself from the light of the candles."

From his thirty-sixth birthday onwards the complaints about his eyes become even more frequent and always in the same strain . . . and they were so painful on many occasions that he was obliged to curtail even his play-going.

Some extra work that he did the latter part of March led him to make another attempt to get relief, for on April 29: "Up and to my office awhile and thither comes Lead with my vizard, with a tube fastened within both eyes; which with the help which he prompts me to, of a glass in the tube, do content me mightily, and then . . . he being gone, to write down my journal for the last twelve days; and did it with the help of my vizard, the tube being fixed to it, and do find it mighty manageable, but how helpful to my eyes this trial will show me."

Pepys had the tubes altered with his usual ingenuity, for on May 8, 1669: "Up to the office and there comes Lead to me and at last my vizards are done and the glasses got to put in and out as I will; and I think that I have brought it to the utmost, both for easiness of using and benefit, that I can; so I paid him 15s. for what he hath done now last in finishing them, and they I hope will do me a great deal of ease. At the office all this morning and this day the first time did altar my side of the table after eight years sitting on that next the fire. But now I am not able to bear the light of the windows in my eyes . . . ."

The vizard and the change of position proved of small use, however, for on May 16, 1669: "Dined at home . . . and I all the afternoon drawing up a foul draught of my petition the Duke of York about my eyes for leave to spend three or four months out of the office, drawing so as to give occasion to a voyage abroad, which I did to my pretty good liking."

Having obtained his leave, he spent the remaining days of the month in making preparations for the holiday, and the Diary ends on May 31, 1669.

And thus ends all that I doubt I shall ever be able to do with my own eyes in the keeping of my Journal, I being not able to do it any longer, having done it now so long as to undo my eyes almost every time that I take a pen in my hand; and therefore what ever comes of it I must forbear; and therefore resolve, from this time forward, to have it kept by my people in long-hand, and must therefore be contented to set down no more than is fit for them and all the world to know; or, if there be anything, which cannot be much now my amours to Deb. are past and my eyes hindering me almost all other pleasures. I must endeavor to keep a margin in my book open, to add here and there a note in shorthand with my own hand. And so I betake myself to that course which is almost as much as to see myself go into my grave; for which and all the discomforts that will accompany my being blind, the good God prepare me.

This pathetic renunciation was written just two hundred and fifty years ago. To the oculist of today it is clearly evident that Pepys' dread of blindness was unfounded, as he discovered in the course of his long life. Had his sufferings been due to simple hypermetropia it is pretty certain that in the many trials of glasses that he made, some lens should have corrected this defect and relieved his asthenopia, but no such relief is recorded. Therefore, it is logical to conclude that an additional astigmatic error was responsible for the continuance of the trouble. As astigmatism was not known until nearly two hundred years later, poor Pepys' case was quite hopeless and he had to give up his Diary. Thus it happened that an error of refraction deprived the world of an untold number of literary and historical contributions that would have been of inestimable value.

Mr. Power, after consulting with some of his confrères, comes to the conclusion that the lenses that would have corrected Pepys' ametropia are, + 2 D. sph + 0.50 D. cyl, ax 90. These lenses he had ground and mounted in a silver spectacle frame modeled on one that came to America in the *Mayflower* in 1620.

Now two hundred and odd years later comes a "modern instance." In August, 1893, Mr. J. R. from Boston consulted me regarding an asthenopia of long standing. He gave the following history: His eyes had given him trouble from the time that he started in school. At first he was troubled only when using them by artificial light, but they gradually grew worse until at times he was unable to study even by daylight. He had severe eye pains and headaches and had to be taken out of school two or three times a year. The work of preparing for college entrance examinations completely prostrated him, and he was sent to recuperate in Europe for six months. The profession that he had chosen was civil engineering, and he had set his heart on entering the Massachusetts

Institute of Technology, before his nineteenth year. As he had already lost over one year in preparatory school, this additional setback was a great disappointment.

When his eyes began to trouble him he was taken to an oculist who prescribed glasses and advised complete rest from close work. While in Europe, he saw an oculist who prescribed stronger glasses and told him to engage in some business that would not require hard work with his eyes.

Much improved by rest and change of climate, he returned to Boston and commenced the study of civil engineering. His eyes soon began to give him trouble and in two months he was obliged to take another rest. He managed, however, to get through the first year, and after three months' vacation in France, he started on his second year, soon broke down, and finally renounced his cherished ambition of becoming an engineer. His father was a merchant, and although Mr. R. disliked a commercial career, he was obliged to go into business and for the last ten years has been at the head of his father's establishment. But, he has never been able to use his eyes for close work.

When I read Mr. Power's interesting article, Mr. R.'s case came vividly to my mind. For not only were the symptoms and the error of refraction in both cases much alike, but the circumstances that in both instances prevented a proper correction of the ametropia were analogous and the final renunciations were the direct outcome of these circumstances.

Mr. R. had 2 diopters of hypermetropia in each eye and was wearing for distance +2 D. sph, with which his vision was 20/20—. For reading he was wearing +2.75 D. When in the process of testing his eyes, having found that I could not improve on his +2 D. with any spherical lenses, I started to try cylindrical lenses, Mr. R. remarked that cylinders had been tried before, but that he never had been able to see so well with them. As it turned out +0.50 cyl did make matters worse, but +0.25 cyl added to the +2 D. sph, R. E. ax 120, L. E. ax 45, brought the vision up to full 20/20.

The last test that Mr. R. had for distance glasses was made in 1871 or 1872, and as at that time the test cases contained no quarter diopter cylinders, his astigmatism was not discovered, and consequently his asthenopia continued unabated. Why, when he was tested for reading glasses in 1889, the error was not detected I can not understand, for there was no uncertainty about the improvement in vision when the cylinder was put in place.

I did not see Mr. R. after my work was finished, but two months later I received a letter from him in which, after informing me that he was using his eyes with perfect comfort and that he spent his evenings "devouring" books that he had been unable to read in the past, he ended his letter with this sentence: "It is truly tantalizing to realize at my age that my life has been ruined and all my ambitions shattered by an astigmatic error of a quarter of a diopter."

Destroying the Fly.—As 99 per cent. of flies are bred in horse manure, the proper care of horse stables means fly extinction. Although the house-fly is the chief carrier of typhoid germs, the little fruit-fly, genus *Drosophila*, which usually breeds in overripe or decaying fruit may breed in human excrement and therefore should be guarded against.—U. S. Department of Agriculture. Farmers' Bulletin, No. 153, Washington, 1908, p. 16.

NARCOTIC DRUG ADDICTION AS REGULATED BY A STATE DEPARTMENT OF HEALTH

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By an act of the Pennsylvania General Assembly, session of 1917, concurrently with the United States Congress, the Harrison Narcotic Law, to all intents and purposes, was placed on the statute books of the commonwealth. Under the police power of the state, the department of health regulates the possession, etc., of certain narcotic drugs now under the control of the United States Bureau of Internal Revenue as relates to interstate commerce. But special provisos in the Pennsylvania act make it unlawful to supply the named drugs in any quantity whatsoever to known habitual users thereof, except in pursuance of a prescription of a duly licensed physician or dentist, and physicians may, under proper regulations, and after a physical examination of an addict and a report in writing, take addicts under treatment, in good faith, for the purpose of curing the habit, and not merely for the purpose of satisfying a craving for the drug.

Section 5 of the Pennsylvania act prohibits administration of these drugs to any person except under the advice and direction, and with the consent, of a duly licensed physician or dentist; but a dentist may not treat an addict.

Records must be kept of administration except in an emergency case. Inspections and reports are provided for, as directed by the commissioner of health. Licenses of physicians and others may be suspended and revoked on conviction of violation of the act or for being a drug addict. Veterinarians may not supply the named drugs for the use of a human being, but may administer them to an animal which has been regularly examined and is under their care.

The commissioner of health was authorized to establish, in the department of health, a bureau or division for the purpose of enforcing the provisions of the act, to require reports to the bureau, and, under the powers conferred on him, to issue rulings and orders necessary for enforcement.

Under the provisions of the act, the bureau of drug control has been created, and, by means of monthly reports covering all purchases of narcotics by physicians and other professional persons, statements from all registered retail druggists of every prescription carrying material quantities of narcotic drugs and giving the names of the patients and physicians, registration of addicts, inspections, police investigations, detective work, and a clinical study of addicts themselves—all followed up intensively in a "This Means You" campaign—is accumulating dependable data which justify some comment.

From the pharmacologic point of view, physicians commonly fail to differentiate between narcotism and narcosis. Narcotism is stupor due to narcotics, while narcosis is the aggregate of influence or effect from continued use of narcotic substances. The latter constitutes a syndrome, a more or less permanent toxication, which is relieved only by renewed intoxicating doses of the enslaving drug, which, in turn, continue the narcosis or toxication, and so on indefinitely. While drug addiction may be considered as a vice, a disease,

a habit; while it may be viewed sociologically, criminologically or psychically, it is, at base, a prolonged toxication. The other matters are incidental, serious though they may be.

Many physicians who have chronic or painful conditions to meet in practice, and who prescribe narcotics for relief, do not seem to realize the danger of addiction, and the fact that the final state of the addict with disease is more aggravated than if narcotics were never prescribed or were used most sparingly. The result is that about one half of the addicts reported to us are diseased persons. We consider them victims of poor therapeutics.

Sporadic, half-way measures of repression are a failure, for commercial effort steps in and offsets all the good done, and peddling of drugs, "underground traffic," and illicit professional use become aggravated by such measures. Only by a sustained and every-day effort, constantly followed up, is good accomplished. General propaganda, while useful incidentally, does not reach the persons involved, and serves only to attract attention to evils that are soon forgotten unless it is the daily business of certain capable people to ferret them out.

We find it necessary to give as much attention to the village as to the large city, for we find that, as to relative population, there is more free and unrestrained addiction in the small places than in the large cities. The larger number of our bad reports come from communities of from 3,000 to 30,000 population, many of them within easy reach of large centers of population. But this statement must be qualified by the further one that in the slums and vice districts of the cities may be found the largest pro-rata indulgence in drugs, although the vicious population is relatively small, even in the larger places. Furthermore, the federal authorities, and some city police departments—by no means all of them—exercise a large measure of control in the cities, while the addicts in small places, and outsiders going there for supplies, have rather free rein.

SOURCES OF SUPPLY

So far as we have been able to ascertain, prescriptions by physicians constitute the main source of supply by addicts, that is, taking the state at large. Much of this catering to the addict is unconscious on the part of the average physician, for there is always a plausible excuse offered, and the physician is unaware of the fact, as shown by our records, that most of these addicts visit several physicians. When we inform the physicians by mail of the facts in the cases, most of them are astonished; they have yet to learn the psychology of the addict. Then, there are many physicians of ready sympathy who think that the laws are oppressive and who forget that addicts lie; these physicians are exploited most shamelessly.

Smuggling is probably the next largest source of supply; but of this matter we have little exact knowledge, since its elimination lies within the province of the federal authorities.

Physicians prescribe narcotics for plausible strangers, who get the prescriptions filled, and it is common to find forgeries presented soon after. Many forged prescriptions are collected in our work. Recently, at our instance, a woman was arrested for forging twenty-six prescriptions and thus illegally coming into possession of narcotics; and yet five physicians were writing prescriptions for her. Two of them wrote on scraps of paper with pencil. These she found easy to be forged.

Some forgers steal pads of prescription blanks from physicians and druggists; sometimes they steal the drugs themselves, or get confederates to do so. We apprehended two of these men, but had to release them because the physicians would not appear against them. Such tactics simply encourage such thefts and discourage the police. Many physicians write prescriptions so illegibly that they cannot themselves tell the genuine from the forgeries.

Some physicians order their drugs from supply houses that shade the price and sell short weight. The possibilities here are immense as regards narcotic drugs.

Physicians write many prescriptions for preparations exempt under the provisions of the Harrison law, more especially for paregoric. Thousands of prescriptions for paregoric are written by Pennsylvania physicians for use by adults, despite the fact that the ordinary use for this preparation is in treating children. The Harrison law does not interdict its sale, and many druggists sell it freely. Most druggists realize that frequent purchase of paregoric in quantity means that the purchaser is an addict who wants both opium and alcohol. One druggist, with a store fronting the University of Pennsylvania, sold more than 2 gallons of it in the month of March. We ordered him to cease such sales, as they are against our regulations.

NARCOTIC DRUGS MOST FREQUENTLY PRESCRIBED

The federal-law-exempt National Formulary elixirs of terpin hydrate and codein, and terpin hydrate and heroin, as well as the host of similar proprietary preparations, are the "best sellers" in the narcotic field, so far as our records in Pennsylvania show, and this was especially the case during the influenza epidemic. Some people take to tippling with codein and heroin on their own account.

Codein is the narcotic appearing most frequently on the reports, morphin next, and then preparations of opium, followed by heroin and others. Cocain prescribing is becoming relatively infrequent. Codein, however, is rarely prescribed in excessive dosage, whereas heroin is very frequently so prescribed, especially in Philadelphia. There lies on my desk, just received, a report from a small drug store on South Eleventh Street, Philadelphia, noting fifty-six prescriptions for narcotics during the month of March. Fifty-one were for heroin, more than 1 ounce of heroin being incorporated in the aggregate number, or, to be exact, for these prescriptions were all written in the metric system, 35.351 gm. These prescriptions were all for addicts alleged to be under treatment for the cure of the addiction by reduction, so the *letter* of the law is obeyed. Of course, few drug stores handle so much heroin in a month. Naturally, we shall investigate every addict appearing on this report, which is difficult to do, for as soon as an addict begins to feel the reduction he usually goes to another physician and begins at the top again.

Proprietaries not federally exempt are largely prescribed by physicians, as our records show. Chief among them is glyco-heroin; papine is prescribed with relative infrequency. Although not under the narcotic laws, hydrated chloral is justly considered dangerous by the druggists, and many of them are reporting prescriptions for this agent, nearly all of

those reported being for bromidia. I have personally examined nine addicts to the latter product. Addicts take paregoric and proprietary preparations containing narcotics in excessive amounts, 1 pint of paregoric at a dose being the extreme we have noted. The extreme dose of morphin, reported by a reliable druggist of Lebanon, was 6 drams at one dose, taken by a woman living in that city. She died some time later, and the details cannot be ascertained.

PRESCRIPTIONS

It is a relatively frequent occurrence for the reports we receive from druggists to carry prescriptions for as much as 1 ounce of morphin. There were three such prescriptions in the January, 1919, report from a drug store in a small town in Northumberland County, as well as five for 1 dram each. In many small towns, similar prescriptions are written, one from a small place in McKean County, carrying 1-dram prescriptions written by a single physician during the month of March in the aggregate of 14⅝ ounces of morphin sulphate. The last is our "prize" record, but we get numerous others which are not far behind it. One drug store in Dauphin County, during the month of February, filled three prescriptions, each for 1 ounce of morphin, and a few months ago filled one for a pound of gum opium. It is common to find a score of prescriptions calling for 1 dram of morphin listed from the stores of one town in a single month.

Records of the foregoing instances, and many more, are on file here, but are open to inspection only by officers of the law, federal or state. Any of the officers named are welcome to come and see, provided they will *do* something in the matter. So far as we can ascertain, the Harrison law has not deterred any of the prescribers noted.

We take up each prescription for an excessive amount of drug with the physician writing it. Of course, most of these are for addicts; but a surprisingly large proportion of them are for aged persons who are a burden to themselves and to every one else. What can the physician do with these people? Many of them have been addicts for forty years, and the physician inherits them from a predecessor who started them on the drug. But many are pure addicts, a few are even of the criminal class. Very many are prostitutes. The medical profession faces a problem—one which we are studying and trying to handle constructively.

Our follow-up on these heaviest prescriptions reveals the fact that some are written for people living at a distance in the country, to save them the inconvenience of a trip to town; it also reveals another fact, which is that there are often in the same family two or three addicts, only one of whom is known to the physician writing the prescription. Occasionally the addict divides with a friend who is a secret user. Occasionally a heavy prescription by a physician turns out to have been for animals on the farm.

We do not conceive it to be the function of the department of health to arrest physicians for technical violations. Our interest lies in the line of prevention and public health, with fair and humane treatment of addicts who are victims of circumstances. We carefully collect evidence, evaluating it judicially and from the clinical standpoint. We issue many warnings to physicians, but report to the authorities the derelict and incorrigible ones, as well as addict physicians and dentists who refuse treatment for their own cure.

Our experience is that the druggists realize the dangers of addiction better than do the physicians. Certainly it is the druggists, and not the physicians, who are the better cooperating with us. We are under many obligations to the pharmacists of the state, practically all of whom are registered with this bureau, while only about one half of the physicians have registered, despite the requirements of the law to this effect. Physicians voluntarily report addicts to us rarely, while the druggists do so very generally.

The heavy prescriber of narcotics always justifies himself in his own eyes, while the druggist compares one physician with another, to the discredit of the heavy prescriber and dispenser. Comparatively few dispensing physicians are heavy buyers of narcotics, but there are enough of them to cause much trouble. The heaviest narcotic purchaser of record with us was a physician, now dead, who bought 400,000 one-quarter-grain morphin pills in one year. He has left a fearful proposition to his successors. Purchases of from 5,000 to 10,000 morphin pills in one year are made by a considerable number of physicians, especially in the north-central district of the state. We fear that some of these physicians come to look on narcotic tablets as so much merchandise, little realizing the harm they are doing with them, for some become very indignant when we write to them about it, and explain, in some instances, that the internal revenue officials raise no issue with them as to their purchases. Of the truth of the latter allegation we have no proof, but as there are about 25,000 dealers, etc., to inspect in the state, and one inspector can adequately examine only six to eight of these in one day, a dozen inspectors, constantly working, are required to cover the state once a year. Naturally, then, a great deal "gets by" without issues being raised.

Hypodermic tablets of morphin figure very prominently in our records of purchases by physicians, and a great many prescriptions are written for them, ranging from twenty-five to 200 tablets each. Some physicians furnish addicts with hypodermic syringes, more especially when the addict's home is remote from the physician's office.

Despite the warnings in the journals and the action of the government, heroin seems to be almost universally used by physicians as a cough sedative. It is displacing codein, largely owing to the fact that, per dose, it costs less than codein. In our view, the manufacture of heroin should be absolutely suppressed.

CLASSIFICATION OF ADDICTS

For purposes of classification we list pure addiction, addiction with disease, addiction with incurable disease, addiction in the aged, and addiction of the criminal.

On the face of the reports, pure addiction is rare; for nearly all addicts claim to have some disease, and any of these persons can find some renegade physician to testify in writing that the individual has disease. Investigation shows the fallacy of most of these reports. We believe that pure addiction really constitutes the larger proportion of all addiction.

Addiction with disease is commonly the result of poor medical or surgical treatment, or of none at all except by medication, which is usually empiric. In relative frequency the diseases named in reports are: neuralgia, chronic diarrhea, asthma, cystitis, other genito-urinary diseases, chronic bronchitis, tertiary

syphilis, tuberculosis, various surgical troubles, postoperative troubles, cardiac affections, diabetes and cancer.

Be it noted that conditions actually justifying the continued use of narcotics are relatively infrequent in the reports. The report is commonly "incurable," which means nothing to us here, for we find that while some of these persons have cancer, various other inoperable conditions, etc., most of these reports mean incurable addict; that is to say, the physician does not care to bother with the treatment of addiction, and roughly classes addicts as "incurable."

Except in obviously incurable conditions and addiction, physicians do not like to write "incurable" on a prescription or report, for the very valid reason that it discourages the patient and his friends, and often drives the patient to the quack or the cultist.

VIOLATORS OF THE LAWS

We believe that the greater proportion of the worst medical violators of the narcotic laws are men past 50 years of age. Before restrictive laws were enacted, narcotics could be freely bought and freely prescribed, and many of the elder physicians became accustomed to carrying addicts along, and want to do so now. Empiricism largely accounts for the aged addict and the aged medical offender against the narcotic laws. It is a real charity, in the larger sense, to give aged and diseased addicts adequate modern treatment, for many can be cured of both the disease and the addiction in the hands of capable physicians. To take a charitable view, misplaced sympathy accounts for some physicians catering to drug addicts.

Catering to addiction has become commercially profitable, and it is carried on by two classes, physicians and pedlers, the latter being a small factor as compared with the nefarious activities of a certain class of debased physicians who are commonly in league with equally debased pharmacists and with the underworld. The pedlers we have had arrested are a sordid lot, not half as shrewd as the newspapers credit them with being. We are accumulating evidence against the debased physicians, pedlers, underworld folk, and criminal addicts, and are beginning to employ the Pennsylvania state police in this work. They are one of the finest police organizations in the country, and we expect good results from their activities. They commonly "get" the man they are after.

A striking fact revealed by our records is that veterinarians are very small purchasers of narcotics, despite the fact that the doses they must use are relatively large. Horses and cattle never have drug habits, and they get the drug only when indicated. We wish the same could be said of human beings.

TREATMENT

Some day, we hope, the treatment of drug addiction will be placed on a rational basis. Thus far it has not been. True, there are some institutions and a few men having excellent results. The best results we have seen were in prisons, and for obvious reasons. Perhaps some of the prison methods might be modified and applied elsewhere.

The gradual reduction method, except in the case of addicts with disease, and of aged addicts, appears to us to be a failure. The matter is one, primarily, of detoxication, and vigorous methods are necessary in most cases. Unfortunately, the average physician is opposed to any method of treatment which entails suffering or discomfort on the part of the patient, and hence his treatment is a mere bluff. Yet he expects the patient with peritonitis, typhoid fever, or pneumonia to suffer discomfort during treatment. Until the profession at large changes its attitude toward the treatment of the drug addict, it will accomplish little of definite value. We need a scientific study of the problem in the general hospitals, and they are in better position to treat the addict successfully than are most of the advertised institutions which make a specialty of such cases. What is their duty in the premises? We do not feel like dictating in such a matter, for the principal function of the health officials is prevention, not treatment. We do not recommend any special form of treatment, but the state has provided for the erection of a special hospital for the treatment of alcohol and drug inebriates, which, when completed and in operation, we hope will develop worth-while methods.

Our Pennsylvania experiment has thus far justified itself, but we are not dealing in illusions. It is on a good legal basis, which we hope to strengthen, and we are fully impressed with the immensity of our task. We believe the department of health is in good position to conduct such work. As yet there is little of scientific value to guide us, and the medical profession is not awake to the perils to society and to public health of the various drug addictions, or to what they threaten to become after national prohibition is in force.

Statements regarding bad medical reports, as made in this article, are recorded with infinite regret. But we must face the issues as they actually are. We are going strictly by the law and the evidence, and have no preconceptions. On the other hand, there is ground for great medical encouragement, for fully three fourths of the records coming into this office are so good that they are merely checked off and filed. So, then, we conclude, justly we believe and hope, that ultimately the whole Pennsylvania profession will be found working side by side with us in this reform. We crave medical interest and noncommercial suggestion, and will welcome them.

RECOMMENDATIONS

One engaged in such work as we are undertaking here is apt to become radical. Be this as it may, kindly permit an expression of personal view, for what it may be worth.

After sufficient administrative machinery, both federal and state, is developed, I believe that the importation and sale of *all* habit-inducing drugs should be made a government monopoly; that it should be unlawful for any physician to prescribe or dispense any of these drugs in any but the accepted therapeutic dosage under any conditions, or to buy or possess them in quantity greater than the legitimate therapeutic needs of his own or institutional practice fully justifies; that pharmacists be prohibited from selling them in any quantity whatsoever, and be allowed to fill no prescription calling for more than the usual therapeutic dosage; and that no ready-made or proprietary product carrying any narcotic whatever be allowed to be sold.

I would have an official, not in medical, pharmaceutical or dental practice, in every district, to whom every particle of the government supply for the district should be sent. It would be his duty to estimate the

legitimate needs of all professional people and to supply them so much and no more, except in time of public emergency or unusual circumstances. To him should be reported every addict in the district, even inoperable surgical cases, as well as all persons requiring, on the testimony of a physician, doses in excess of the usual; and this official would supply to these persons such amounts as would appear necessary, humanely caring for the addicts already made, but sternly refusing to supply new ones except those with disease which positively demand large doses.

This plan would yield definite results and would relieve the physician of an unwelcome class of work that, in the nature of the case, he cannot handle well. Perhaps there would be much medical objection at first; but I believe it would work so well that the profession at large would soon come to support it most enthusiastically. Certainly it would relieve the profession of a great amount of narcotic bookkeeping and reports, and I believe it would control the problem much better than does any existing plan.

PROTRUSION OF ARTIFICIAL PNEUMOTHORAX INTO THE OPPOSITE UNTREATED SIDE *

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The effect of unilateral increase in intrapleural tension, as seen in pleural effusion and spontaneous pneumothorax, on the position of the mediastinal organs, had been well known long before artificial pneumothorax was added to the armamentarium of phthisiotherapy. Indeed, one of the most important signs of pleural effusion and spontaneous pneumothorax is displacement of the heart toward the sound side. Grocco's triangle as a sign of pleural exudate is also supposed to depend on the shifting of the mediastinal contents toward the unaffected side.

Most of the information regarding the effect of increased intrapleural tension on the mediastinum gathered in previous years was, however, mainly the result of observations in cases of pleural effusion. Nitch,[1] in a rather instructive article based on experimental evidence, describes most lucidly the anatomy of the mediastinum, laying particular stress on those vulnerable points which are most likely to yield to increased intrapleural pressure. He, however, seems to put pneumothorax and pleural effusion in one and the same category. It must be pointed out that the hydrostatic pressure of pleural effusion and the pneumatic pressure of pneumothorax will not at all behave in the same manner, the essential difference being that fluid exerts its pressure on most dependent parts, while air exerts pressure equally in all directions. Hence, while fluid will cause displacement mostly of the heart and the lower mediastinal organs, air will produce displacement of these organs as well as distention of the pleural sac at the most vulnerable points, whether this vulnerable point be at the upper or the lower portion of the mediastinum.

It has already been pointed out by various observers that the displacement of the mediastinum during the course of artificial pneumothorax is a rather frequent occurrence. The degree of displacement will depend on the presence or absence of pleural and pleuropericardial adhesions, on the extent of the mobility of the mediastinum in the individual patient, and on the amount of pressure created.

Along with marked displacement of the mediastinum during the course of artificial pneumothorax, we have had occasion to observe another phenonenon, of which, so far as we could find, no mention has been made before. This phenomenon, though associated with displacement of the mediastinum, is dependent on an entirely different factor, and that is extreme distensibility of the pleura.

As has been proved by physical signs and confirmed by roentgenologic examination, the cases that came under our observation showed a pocket of pneumothorax extending into the untreated side to about 3 inches beyond the median line on a level with the first

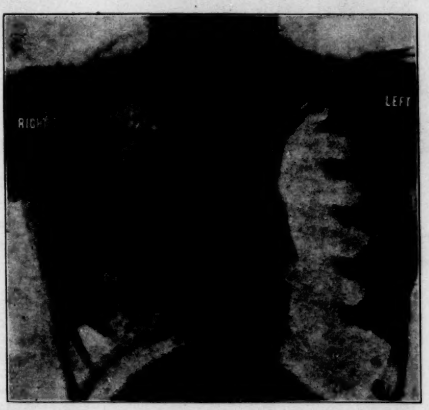

Fig. 1 (Case 1).—Left pneumothorax: mediastinum markedly displaced to right; semicircular area of pneumothorax to right of sternum.

space to the third rib anteriorly. Considering that at this area the two pleural sacs meet at the median line; and furthermore, since, as pointed out by Nitch,[1] the mediastinal space at this area contains nothing but loose areolar tissue, it is surprising, indeed, that we do not observe the pneumothorax extending beyond the median line more often. It is possible, however, that many such cases passed unnoticed.

REPORT OF CASES

CASE 1.—*History.*—E. H., schoolgirl, aged 17, admitted to Bedford Sanatorium, June 18, 1918, with negative family history and previous personal history, though subject to occasional cough for an indefinite time, had not had symptoms in any way disturbing until about one and a half years before admission, when cough and expectoration greatly increased. At this time, she also experienced elevation of temperature in the late afternoon hours, the fever occasionally rising to 104 F. This condition continued for about three months. During that time she also suffered from frequent night sweats and considerable loss of weight and strength. Accordingly, the patient was admitted to an institution for the tuberculous in New York City, where a physical examination disclosed

* From the Montefiore Home Country Sanatorium.
1. Nitch, A.: Beitr. z. Klin. d. Tuberc. 18:1, 1911.

marked infiltration and cavity formation in the upper half of the left lung, infiltration at the right apex, displacement of the heart considerably to the left, and considerable retraction of the diaphragm on the left side. In view of these physical findings and the rapid progress of the disease, pneumothorax was induced on the left side, Oct. 16, 1917. Subsequent refills were given at regular intervals till March 11, 1918. At no time were there more than 600 c.c. of gas given. The final

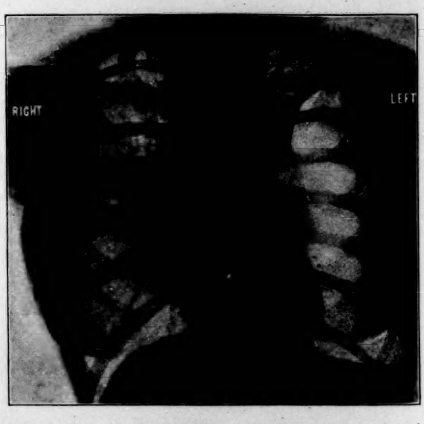

Fig. 2 (Case 1).—Condition five months later; absence of semicircular area of pneumothorax to right of sternum.

intrapleural pressure was usually about plus 2 to plus 3 cm. of water. Roentgenograms taken on various occasions disclosed progressive increase in the pneumothorax area and gradual displacement of the mediastinal organs to the right. The improvement in the patient's condition was remarkable. The fever abated, cough and expectoration diminished, and a considerable increase in weight was noted. The patient was transferred to the Bedford Sanatorium, June 18, 1918.

Physical Examination.—The left chest was hyperresonant throughout except at the extreme apex. The right chest showed impaired resonance from the apex to the second rib aneriorly. On auscultation, distant amphoric breathing and amphoric whisper were elicited all over the left chest. Breathing and whisper of the same character were heard also over the upper part of the sternum and in the first, second and third spaces to the midclavicular line on the right side. The coin sound during percussion over the left side posteriorly was heard all over the left side anteriorly, extending over the upper part of the sternum and to about the midclavicular line on the right side. There was an area of loud amphoric breathing and whispered pectoriloquy just above and outside of the right nipple.

Fluoroscopy and a roentgenogram (Fig. 1) taken June 10, 1918, disclosed pneumothorax occupying the entire left pleural cavity with the exception of the apex, marked displacement of the mediastinal organs to the right, and a definite semicircular air-containing area extending to about 2 inches to the right of the sternum on a level with the first to the third rib.

Treatment and Course.—Refills were continued at intervals of from three to four weeks, the final pressure at most refills not being more than plus 1 cm. of water. The degree of mediastinal displacement was gradually lessened, and the air-containing semicircular area to the right of the sternum gradually disappeared, as shown in Figure 2.

CASE 2.—*History.*—C. P., schoolgirl, aged 16, admitted to Bedford Sanatorium, July 18, 1918, with unimportant family and previous personal history, reported that one and a half years before admission she had caught cold, and had begun to cough and have pain in the chest on breathing. Afternoon rise of temperature and night sweats soon made their appearance, with the inevitable loss of weight and strength. She was confined to her bed for about three months, when she finally gained admission to the Mount Sinai Hospital, New York, where, on account of continued symptoms, marked involvement of the left upper lobe, and a relatively clear right lung, a left pneumothorax was induced, Feb. 1, 1918. Subsequent refills were given at the usual intervals until June 11, and although at no time were there more than 700 c.c. of gas introduced, the final intrapleural pressure was permitted to rise to plus 3 and even to plus 5 on several occasions. The patient improved markedly, most of the symptoms disappearing, and was transferred to Bedford Sanatorium, July 18, for further treatment.

Physical Examination.—On the day after admission there was hyperresonance throughout the left chest and the inner part of the right infraclavicular region. Distant amphoric breathing and amphoric whisper were elicited all over the left chest anteriorly and posteriorly. Breathing and whisper of the same character, pitch and intensity as over the left side were also heard over the upper part of the sternum and to about the midclavicular line in the first, second and third spaces on the right side. During percussion with a coin over the left side posteriorly, a metallic sound could be heard over the upper part of the sternum and over the same area on the right side above described, as well as all over the left side anteriorly. No coin sound could be elicited on percussing the right side posteriorly. The heart was markedly displaced to the right. There was evidence of a small amount of fluid at the left base.

Fluoroscopy and a roentgenogram (Fig. 3) revealed pneumothorax occupying the entire left pleural cavity. An irregular air-containing area, extending to about 2 inches to the right of the right sternal margin encroaching on the right lung and partially collapsing it, was definitely seen.

Treatment and Course.—While the patient remained at the sanatorium, refilling was done at intervals of about three weeks. The amount of air introduced was usually about 400

Fig. 3 (Case ?).—Left pneumothorax; mediastinum markedly displaced to right; air-containing space to right of sternum.

c.c. and the final intrapleural pressure was never above plus 2 cm. of water.

During the course of treatment a moderate amount of fluid formed at the left base. The fluid was promptly absorbed, leaving behind rather extensive adhesions at the left base, and as a result of these adhesions the mediastinum was drawn considerably to the left.

Frequent fluoroscopy and roentgenographic examinations showed that the degree of displacement of the mediastinum

gradually diminished, the air-containing area that extended to the right of the sternum gradually disappeared, and finally the mediastinum was drawn markedly to the left, as seen in Figures 4 and 5.

COMMENT

These cases deserve scrutiny, since both of them show a characteristic protrusion of the distended

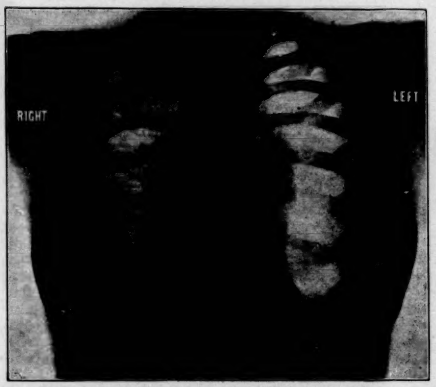

Fig. 4 (Case 2).—Condition six weeks later: air-containing area to right of sternum considerably smaller.

pleural sac, encroaching on the untreated side, in addition to marked displacement of the mediastinal organs.

On superficial examination, the amphoric breathing and amphoric whisper that were elicited on the right (untreated) side could be considered as evidence of cavitation on that side. But, as stated above, the amphoric breathing and amphoric whisper that were heard over the upper part of the sternum and over the first, second and third spaces on the right side were exactly of the same quality, pitch and duration as those heard over the left (pneumothorax) side. The same was also true of the coin sound. On percussion over the left side posteriorly, a definite metallic sound was elicited over the above described area on the right side as well as all over the left side anteriorly. These physical signs leave hardly any doubt that the signs on the right (untreated) side were due to the pneumothorax on the left side.

But whether these signs were due to a pocket of pneumothorax actually protruding into the right side, or the pneumothorax signs were merely transmitted from the left to the right side, had as yet to be determined. But this was definitely decided by fluoroscopy and roentgenographic examination.

Figure 1 (Case 1) shows a definite semicircular, air-containing area to the right of the sternum which can hardly be considered as anything else but a protrusion of a left pneumothorax into the right side. Furthermore, Figure 2 of the same patient, taken a few months later, when the intrapleural pressure was reduced, shows that this area has absolutely disappeared, at the same time that the mediastinal organs have returned nearer to their normal position.

Figure 3, Case 2, is perhaps less typical of a protruding pleural sac, as most probably the air-containing area merges into the light area produced by the displaced trachea; but, correlating the physical signs and the roentgenographic findings in both these cases, it could hardly be doubted that in both of them we are dealing with a gas-containing pleural sac protruding from the left to the right side.

The causation of such protrusion can easily be explained, when we remember that opposite the second and third ribs anteriorly the two pleurae meet at the median line. Furthermore, as mentioned above, Nitch has found that at this area the mediastinum contains nothing but loose areolar tissue, owing to the fact that the thymus gland is atrophied in the adult. It is clearly seen that when the pleura is distensible and a certain amount of pressure is introduced, the pleura will easily protrude in this area, which is undeniably its most vulnerable point.

Displacement of the mediastinum was rather marked in both cases. Case 2 shows, in addition, extreme mobility of the mediastinum, since at first a marked displacement to the right is noted, as shown in Figure 3. Figure 4 shows the mediastinum almost in its normal position, and finally marked displacement to the left is to be seen, as an examination of Figure 5 will show.

The degree of mediastinal displacement is dependent on a variety of factors. While a considerable amount of pressure is necessary to produce marked displacement, there are various modifying influences which will either prevent or facilitate displacement of the mediastinal organs. The most important factors that will facilitate mediastinal displacement are absence of pleural and pleuropericardial adhesions, and elasticity and distensibility of the ligaments that hold the mediastinum in place.

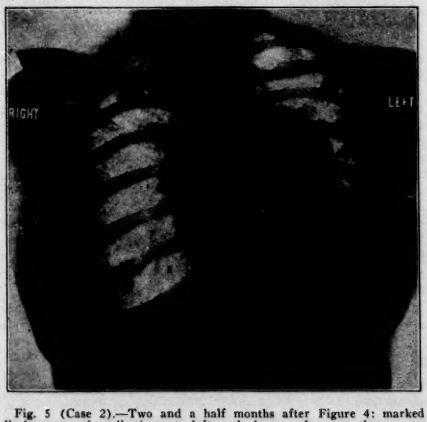

Fig. 5 (Case 2).—Two and a half months after Figure 4: marked displacement of mediastinum to left, and absence of pneumothorax area to right of sternum.

It is to be noted that both our patients are young adults (16 and 17 years of age), and undoubtedly their youth had something to do with the ease with which their mediastinal organs were displaced and their pleurae distended. It is reasonable to suppose that in the young the ligaments are more elastic and the pleura more distensible than in older persons.

EPIDEMIC ENCEPHALITIS LETHARGICA

OR EPIDEMIC SOMNOLENCE, OR EPIDEMIC CEREBRITIS, WITH REPORT OF CASES AND TWO NECROPSIES

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In taking up the subject of epidemic encephalitis lethargica I have not gone into the history of the condition because in doing so I would be repeating matter which has already appeared in THE JOURNAL.[1] These articles, however, do not refer to certain previous publications on the subject. Dr. I. P. Battle of Rocky Mount, N. C., has kindly furnished me with reference to an article published by Landon Carter Gray, W. B. Pritchard and R. C. Shulz.[2] In this article is described a condition known as "nona" which seems to closely resemble the present epidemic. There also appeared an article by Trautjen[3] in 1890 in which he attributed the condition to the influence of the recent epidemic of influenza. Another article on the condition appeared in 1890 by Hammerslough,[4] and another the same year by Mauthner.[5] This article attributed the pathologic lesions to polioencephalitis superior.

REPORT OF CASES

CASE 1.—L., a colored man, aged 21, had no history of influenza or other infectious disease except a probable chancre one year before. There was no history of secondary syphilis, no glandular enlargement, nor apparent signs of syphilis. Somnolence appeared in the latter part of December, 1918, and followed a pain in the chest, a sense of sudden hunger, and great muscular weakness, especially of the legs. He also had headache, vertigo and tinnitus. There was slight elevation of temperature at times. The respiration and pulse were normal. The deep reflexes were exaggerated, there was double ankle clonus, no Kernig's sign and no Babinski reflex. General spasticity was present to a moderate degree. Examination of the eyes revealed photophobia, nystagmus, diplopia, and limitation of lateral excursions. Mentally, the patient was normal when aroused. The cerebrospinal fluid was under greatly increased pressure, globulin test negative, Wassermann test negative. Examination of the blood gave a leukocyte count of 8,200. A Wassermann test on the blood was negative. Examination of the urine was negative. The patient lay in one position unless aroused, but when aroused talked rationally and took medicine and food. There was no incontinence. He was somnolent about a week, and died shortly afterward. Necropsy revealed very severe congestion of the superior longitudinal sinus; cobweb adhesions over the base of the brain involving the cranial nerves and extending down into the cord; marked congestion of the entire cortex; tremendous distension of the third, fourth and lateral ventricles, and swelling and congestion of the pituitary.

CASE 2.—P., a white man, aged 30, with no history of influenza, began to be somnolent about one week before coming to the sanatorium. He had a slight elevation of temperature, headache, nausea and vertigo. Preceding the onset he had several days of restlessness and excitement. There was no respiratory involvement. The right knee jerk was absent and the left diminished. There was no Babinski reflex, no clonus and no Kernig's sign. There was no muscular rigidity. He had double ptosis, conjunctivitis and diplopia and the pupils were sluggish to light. The patient had slight exophthalmos, choked disk on the right, and slight blurring of the left eye ground. The blood pressure was normal. A lumbar puncture revealed the fluid under increased pressure; the cell count was 35, and the globulin slightly increased. Wassermann tests on both the cerebrospinal fluid and the blood were negative. There was a leukocytosis of 17,600. The urea content of the blood was increased. The urine showed a specific gravity of 1.014, some hyaline and granular casts, and no albumin, but there were no clinical signs of a uremic condition. The patient slept most of the time and lay in one position, speaking only when spoken to, and then only in monosyllables. He could be aroused for food and medicine and urination and defecation, but immediately became somnolent again. He died after sixteen days of somnolence. His respiration kept up ten minutes after his heart stopped. Necropsy was refused.

CASE 3.—C., a white boy, aged 7 years, had influenza in October, 1918, recovered, and remained well until Feb. 22, 1919, when he began to be somnolent, and had a temperature between 100 and 102 F. for four or five days. Since then his pulse and respiration have been normal and there has been no respiratory involvement. He has had no nausea or headache but occasional vomiting. The patient had no clonus, no Kernig's sign and no Babinski reflex. His knee jerks were normal. There was no cranial nerve involvement. The muscular tone was catatonic, and "lead pipe" rigidity was present. The pupils were slightly dilated and sluggish to light, but the fundi were negative. When aroused he would look at one, but he spoke only a few words the four weeks he was somnolent. The cerebrospinal fluid showed moderately increased fluid pressure; cell count, globulin and the Wassermann test were negative. There was a leukocytosis of 12,400; polymorphonuclears, 43 per cent.; small lymphocytes, 50 per cent.; large lymphocytes, 6 per cent.; eosinophils, 1 per cent.; malaria, negative. The blood urea was increased. The urine was negative. The child did not change his position in bed; he could be aroused for food and medicine, but refused to talk. He had incontinence of urine and feces unless aroused. He recovered after four weeks of somnolence.

CASE 4.—T., a white man, aged 41, had influenza in November, 1918, and was sick ten days with fever, cough, headache and delirium. This was followed in a few days by a right hemiplegia with aphasia, thought to be due to a cerebral thrombus. The somnolence began about two weeks after the influenza, and has kept up ever since. The patients temperature was between 100 and 102 F. for two months, but it has since been normal. His respiration has been normal and his pulse has ranged between 66 and 90. He has had no respiratory involvement since influenza in November. He has had occasional headache and vomiting, but no vertigo. At first he had a slight Kernig's sign, Babinski reflex on the right, right hemiplegia, left facial palsy, slight clonus on the right, and general spasticity. The Babinski reflex and clonus have disappeared, and the spasticity has improved. The pupils were sluggish, and at first there was moderate choking of both disks. The patient rarely speaks or attempts to speak, and is very lethargic. The cerebrospinal fluid was under pressure, the cells and globulin were increased, the Wassermann test and culture on the fluid were negative. The leukocyte count was 10,000 and the blood Wassermann test negative. A blood culture disclosed the presence of *Bacillus pyocyaneus*, but this disappeared under autogenous vaccine. The urine has been negative throughout. The blood pressure has ranged around 130 systolic and 90 diastolic. The patient can be aroused for food and medicine and looks around, but otherwise has been profoundly somnolent for over three months, and has incontinence of urine and feces.

CASE 5.—S., a white man, aged 28, with no history of influenza, began to be somnolent, Feb. 25, 1919, and developed a rise of temperature ranging from 99 to 100 F. The pulse and respiration were normal and he had no symptoms of respiratory tract involvement. At first he had headache, but no vomiting nor vertigo. He had no Babinski reflex, no Kernig's sign, no clonus and no rigidity. The knee jerks were absent. When aroused, he complained of diplopia; the pupils

1. Pothier, O. L.: Lethargic Encephalitis, J. A. M. A. **72**: 715 (March 8) 1919. Epidemic or Lethargic Encephalitis (Nona), special article, ibid. **72**: 794 (March 15) 1919. Epidemic or Lethargic Encephalitis, editorial, ibid. **72**: 796 (March 15) 1919. Bassoe, Peter: Epidemic Encephalitis (Nona), ibid. **72**: 971 (April 5) 1919.
2. Gray, L. C.; Pritchard, W. B., and Shulz, R. C.: Annual of Universal Medical Sciences, Sajous **2**: A-39, 1891.
3. Trautjen: Berl. klin. Wchnschr., June 2, 1890.
4. Hammerslough: Wien. med. Presse, May 11, 1890.
5. Mauthner, Ludwig: Wien. med. Wchnschr., July, 1890.

were dilated and did not react to light. He had bilateral choked disk and bilateral ptosis. The conjunctivae were somewhat injected. The spinal fluid was under greatly increased pressure, the color clear, and the cell and globulin content increased. The Wassermann test was negative. There was a leukocytosis of 14,000. The blood showed a moderate increase in the urea content. The urine was negative and the blood pressure normal. The patient was profoundly somnolent but could be aroused for food and medicine. When aroused, he would answer questions only in monosyllables and would not speak voluntarily. He lay in one position unless moved, and had incontinence of urine and feces. He died after twenty days of somnolence. A necropsy of the brain was performed by Dr. S. W. Budd of Richmond.

The skull was opened in the usual manner. After removal of the skull-cap it was noticed that there was considerable congestion of the dura and underlying tissues, and that along the longitudinal sinus there were many varicosities on each side in the region of the fissure of Rolando. On removal of the dura it was noted that all of the membranes were attached to the cortex for 1½ or 2 inches on each side of the longitudinal sinus. Elsewhere the brain was in no way adherent to the membranes. On removal of the brain there was noticed a thin, delicate, inflammatory membrane over the base and extending well up over the temporal lobes of the brain. This membrane was prominent around the cranial nerves, the pons and the medulla, and there were a number of cobweb adhesions between the cranial nerves and the brain. On section of the cortex of the brain the capillaries were distended, but there was no evidence of macroscopic hemorrhage. The lateral and third ventricles were not dilated. There was no evidence of congestion or hemorrhage in the region of the fourth ventricle. On section through the cerebellum the tissues looked normal. Microscopic examination of the cortex of the temporal lobes showed a slight enlargement of the capillaries, with occasional polymorphonuclear leukocytes around the capillaries, and the individual nerve cells seemed a little larger than normal. The pia mater and the arachnoid were infiltrated with a moderate amount of fibrin and polymorphonuclear leukocytes, and the capillaries were much distended. The medulla, pons and cerebellum showed the same histologic changes as the cortex. Cultures from the base of the brain and the meninges were negative for pathogenic organisms. The pituitary body was much congested and infiltrated with blood cells into the tissues. There was also some cloudy swelling of the cells of the pituitary body. This congestion was in both the anterior and the posterior lobes of the gland. The pituitary body was also enlarged in size.

CASE 6.—B., a white man, aged 51, was thought to have influenza in August, 1918. He had taken sick, March 1, 1919, with a temperature ranging from 100 to 101 F. for a week, but with no cough or respiratory symptoms. March 14, the patient became somnolent and slept most of the time for a week. Pulse and respiration were normal. There was no respiratory tract involvement, vomiting nor headache, but there was some vertigo. There was a bilateral Babinski reflex, but no clonus. The knee jerks were negative, and the speech was a little thick. The conjunctivae were injected. The patient complained of diplopia, and the pupils were somewhat contracted. The blood pressure was normal. The spinal fluid was under increased pressure, the cell count 25, globulin increased, Wassermann test negative. The leukocyte count was not made. The urine was negative. The patient was very somnolent, did not change his expression or his position in bed, and rarely spoke, but would eat, urinate and defecate when aroused. He remained somnolent for a week.

The symptoms in the remaining five cases practically corresponded to those in the cases more fully reported. Only the striking points of these five are mentioned:

CASE 7.—F., a child, was somnolent for three days, and for several days afterward showed marked difficulty in gait with practically no changes in the deep reflexes. He made an uneventful recovery in a week.

CASE 8.—B. showed the usual symptoms, and was the only patient that showed difficulty in hearing. He had considerable nerve deafness on the right. There was also paresis of both oculomotor, right facial and the right hypoglossal. Somnolence lasted a week, and he made an uneventful recovery.

CASE 9.—M. did not give a history of influenza but had considerable rigidity, and the case somewhat resembled meningitis. The spinal fluid, however, was negative and the somnolence lasted only four days. The patient made an uneventful recovery.

CASE 10.—C. presented a typical case in which somnolence lasted about twelve days. This was the only case in which a roentgenogram of the skull was made. The roentgenographic findings were entirely negative.

CASE 11.—T. resembled the others except that he had very low blood pressure, it being 76 systolic and 58 diastolic on admission. This gradually became normal within three weeks. His somnolence lasted five days, and he made an uneventful recovery.

DEDUCTIONS

The incidence of influenza in these cases, and in others I have seen, is so striking that I believe epidemic encephalitis lethargica is either a manifestation of a recrudescence or recurrence of influenza, or in certain cases the expression of influenza per se. This is not absolutely proved, but is the most probable conjecture.

Since the height of the influenza epidemic there have been observed, all over the country, numerous cases of influenza which had, as sequelae, vertigo, depression of spirits or mania, and one or more cranial nerve affections. These cases are probably cases of encephalitis of more or less severity sine lethargica.

I cannot see any relation between epidemic encephalitis lethargica and infantile paralysis, either clinically or pathologically, nor do I think these cases should be termed meningitis, because the usual organisms of meningitis cannot be found in the cerebrospinal fluid, and pus is not found in the meninges at necropsy. Again, the clinical symptoms are not typically those of meningitis, even in the cases presenting spinal rigidity.

Epidemic encephalitis lethargica appears to resemble brain abscess more than any other condition. In fact, I have had three cases sent to me with the diagnosis of brain abscess. The history of rise of temperature, vomiting, vertigo and headache, and the finding of choked disks, cranial nerve palsies, drowsiness, leukocytosis and increased cerebrospinal fluid pressure in both conditions make a careful differential diagnosis necessary.

Epidemic encephalitis lethargica seems to be due to congestion of the pia and the encephalon, chiefly at the base of the brain, and to be accompanied by a slight inflammatory exudate affecting various cranial nerve roots and causing, as a rule, increased intracranial pressure with increased globulin content and increased cell count in the fluid.

Examination of the urine reveals nothing of special interest, but examination of the blood presents an almost constant moderate leukocytosis, and commonly an increase in the urea content.

We seem to be dealing more with a syndrome than with a new disease, and this syndrome is chiefly manifested by moderate transient elevation of temperature and frequently by headache, vertigo, vomiting, conjunctivitis, diplopia, choked disk, various cranial nerve palsies, muscular rigidities, changes in reflexes, increased cerebrospinal pressure with increased cell count and globulin content, increased blood urea, and last, but not least, somnolence, from which the patients

may be aroused for food and medicine, but in which they usually lie without change of position or expression, and have incontinence of urine and feces.

I believe that the somnolence is chiefly due to pressure and inflammation of the pituitary gland.

ANTERIOR DISLOCATION OF THE ATLAS WITH A BREAK IN THE CONTINUITY OF THE ANTERIOR ARCH *

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In view of the fact that the combination of a break in continuity and dislocation of the atlas is rather unusual and that the patient gave a history of symptoms from the date of injury which might be attributed to this condition, this case seems of interest to report.

REPORT OF CASE

A private, aged 24, a ground man in an aero squad, a college student before entering the army, with a negative history, was injured by making his escape from a German air raid on the aerodrome to which he was attached, Aug. 17, 1918. He was found in an unconscious state along the roadside, and was taken to a dressing station, where a few hours later he regained consciousness. The patient remained here for ten days, during which time he suffered from intense headache and pain in the neck. Morphin was administered and also acetylsalicylic acid, but a diagnosis was not made.

He was transferred from this station to Hospital No. 13, at Boulogne. Here a roentgen examination was made and a diagnosis of skull fracture was reported. The symptoms increased in intensity, and the treatment was continued. After several days he was removed to Base Hospital No. 37,

Fig. 1.—Lateral view of base of skull and upper cervical region; arrow points to anterior subluxation of atlas.

Dartford, England. The roentgen examination at this hospital was said to be negative. A diagnosis of eyestrain was made and the patient was fitted with glasses. The severe headache and the pain in the neck continued, in conjunction with which the patient said that his mind would become a blank at times. He lost weight and suffered from insomnia. Morphin and acetylsalicylic acid were administered for pain.

After two months he returned to this country, arriving at Staten Island, December 16. One month later he was transferred to U. S. Army General Hospital No. 3, at Colonia, N. J.

On admission the condition of the patient was good, but he complained of severe pain in the head and the neck which was more marked on the right side. The neck was stiff,

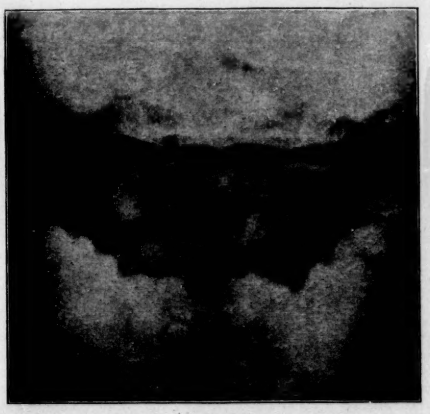

Fig. 2.—Anteroposterior view of atlas and axis through open mouth; arrow indicates break in continuity of anterior arch of atlas.

rotation was limited, and the patient maintained a characteristic position of the head.

The department of neurology reported: cranial nerves negative; no palsies nor ataxias; superficial reflex active and equal; deep reflex exaggerated; right knee jerk definitely more active than left. The musculature of the limbs of the right side suggested more tone, and there appeared also to be somewhat stronger power in the left limbs (which, however, might be more apparent than real). There were no sensory changes, but some tenderness was found on percussion just below the inion. Another important and interesting symptom which developed just recently is that while the patient was on his way home on furlough, he temporarily had to abandon his trip and was taken to a hospital because of the severe pain which he developed in the head and the neck as a result of the jolting of the train.

The patient was referred to the department of roentgenology, Jan. 20, 1919, for the purpose of determining a possible skull fracture.

A stereoscopic examination was made of the skull and the upper cervical region. It was found that the skull was free from fracture, but that there was an anterior displacement of the atlas, as shown in Figure 1. An anteroposterior exposure was then made through the open mouth. This examination shows a break in the continuity of the anterior arch of the atlas, as shown in Figure 2.

Although several other plates were made to determine a possible error, each following examination showed an absence of skull fracture, but with these findings always present, namely: There was an anterior displacement of the atlas with a break in continuity of the anterior arch; the odontoid process was intact and free from bony articulation, and the anterior surface of anterior tubercle of the atlas was on a plane anterior to that of the anterior margin of the body of the axis.

The nasopharynx was examined, and a definite bulging mass, which was thought to be the anterior arch of the atlas, was found to occupy part of the cavity.

In view of the fact that the anterior arch sometimes develops from two centers instead of one, we have

* From U. S. Army General Hospital No. 3.

thought about the possibility of the break in continuity as being a lack of fusion of the centers, rather than the result of a fracture due to the injury. There is, however, no question in regard to the anterior subluxation of the atlas, both from the roentgen findings and also clinically.

SPONTANEOUS PERIRENAL HEMORRHAGE (HEMATOMA)

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The infrequency of spontaneous rupture of the kidney, only about thirty cases being recorded, and its seriousness without early surgical intervention, lead me to make this report of two cases. The fact that the patients were admitted to medical services and were kept under observation for some time before being transferred for surgical treatment is evidence that the condition is also of importance to internists.

REPORT OF CASES

CASE 1.—*History.*—J. S., man, aged 27, admitted, Dec. 26, 1916, to the service of Dr. Roger T. Vaughan, with a diagnosis of lumbago, gave a history of pain over both kidneys for three weeks, increasing each day, and with exacerbations every ten to twenty minutes, so acute as to cause writhing and groaning. There was no vomiting nor nausea, and the pain did not radiate.

For five months, and ending four months previous to admittance, he had been employed in a place where anilin dyes were made. He left this occupation perfectly well, but urination for some time had occurred three or four times each night, and from four to six times daily. The family history was negative. The only prior illness, about four years previously, was diagnosed as a severe stomach trouble and was accompanied by vomiting and pain in the epigastrium and at a corresponding level in the back. This illness lasted three months. Syphilis and gonorrhea were emphatically denied. The patient was accustomed to drink about one-half pint of whisky every day. With the present illness there was no nausea nor vomiting.

Examination.—On admission the patient was very ill; the face was drawn; the eyes were sunken, and he was groaning most of the time and rolling about at times on his hands and knees and again lying flat on the abdomen. The temperature was 100 F.; pulse, 76; respirations, 20. Physical examination of the head, neck and chest was negative. The abdomen was flat, soft and without rigidity. There was tenderness on the left side in the region of the descending colon. There was no palpable mass in the abdomen. The Wassermann test was negative, culture mediums inoculated with the blood remained normal. Blood count revealed: leukocytes, 24,000; polymorphonuclears, 67 per cent.; small mononuclears, 16 per cent.; large mononuclears, 7 per cent. There were many pus cells and a few hyaline casts in the urine. The specific gravity was 1.020. There was no sugar. The roentgenographic examination for renal and bladder calculi was negative.

Jan. 7, 1917, there was pain in the shoulders and arms and lumbar region. There was increase of pain with movement. Blood count disclosed: leukocytes, 30,000. There were pus cells in the urine.

January 20, there was sharp, severe and continuous abdominal pain in the right iliac region and tenderness over McBurney's point. There was rigidity of the right rectus abdominal muscle. Constipation had been in evidence for two days, and was relieved by colonic flushing, but this failed to relieve the pain. There were 78,000 leukocytes. A diagnosis of appendicitis was reached, and the patient was transferred to the surgical service.

Operation.—When the abdomen was opened through a right rectus incision, the only lesion found was a large, dark, retroperitoneal mass which was opened external to the cecum and emptied of about 30 ounces of clotted blood. The clots were laminated and obviously the result of repeated hemorrhages. Exploration of the cavity revealed a perforation of the kidney. The abdominal wound was closed and the kidney was removed by the usual lumbar incision. The clamps left on the kidney pedicle were loosened after three days and were removed on the fourth. Recovery followed without noteworthy developments, and the patient was discharged, March 7, 1917.

Examination of the Kidney.—Gross and microscopic examination of the kidney demonstrated an ascending infection with multiple abscesses, with erosion (necrosis) of an arcuate artery and the formation of a small crater-like tear in the lower pole, 2 cm. deep in the cortex with extension of the hemorrhage from here into the perirenal fat, where there was still considerable blood.

CASE 2.—*History.*—M. S., man, negro, aged 42, admitted to the medical service of Dr. Milton Portis, Aug. 8, 1918, complained of pain in the abdomen and back, vomiting and retention of urine. The illness had begun two months previously and one month after pneumonia, with the pain as stated in the back and abdomen, and with sharp attacks when the pain radiated to the genitals, the left thigh and occasionally to the left knee. Tenderness all over the left side was constant. There was a history of polyuria and of two urinations, as a rule, each night. About three weeks before admission the urine was red with blood and contained small clots on two occasions.

Examination.—On entrance a systolic murmur was heard at the apex, and the heart was apparently pushed upward a little. Expansion of the left side of the chest was somewhat limited. Systolic blood pressure was 120 mm.; diastolic, 60 mm. Pulse, respirations and temperature were normal. There was tenderness over the whole left side of the back up to the eighth rib and to the midline behind. The abdomen bulged somewhat on the left side, where a mass was felt extending up to the fourth rib and down to the iliac crest—a firm mass without notches, unmoved by breathing. Tenderness was present on the left side, as was found by rectal examination.

Cystoscopic examination by Dr. Harry Culver revealed the fact that a 24 French urethral sound passed without difficulty. The bladder was tolerant to fluid and to instruments. There was no blood in the urine, but a large, partly organized clot was found on the lining of the base of the bladder. The mucosa of the bladder was otherwise normal. Both ureters were catheterized without difficulty. The urine became clear after irrigation with sterile water. Of the left renal pelvis, the capacity of which was 18 c.c., a pyelogram was made.

Blood test revealed: hemoglobin, 75 per cent.; leukocytes, 25,500; polymorphonuclears, 94 per cent.

The clinical diagnosis was hypernephroma of the left kidney.

Operation.—Following transference to the surgical service, the abdomen was opened, August 15, through a long vertical incision in the left rectus abdominis region. Conditions in the abdomen were found normal, except for an enormous, dark purple mass located retroperitoneally on the left side. An opening was made through the mesocolon and about 3 liters of blood, most of which had been clotted for some time, were removed. The clots in this case were also somewhat laminated. The kidney appeared to be softer than normal, but was normal in size and no tumor was found. On account of the serious condition of the patient, the cavity was packed with gauze and the abdomen closed. Death occurred the next day. It was impossible to obtain a postmortem examination.

COMMENT

In view of the history of pneumonia and a heart murmur, it may well be thought, in this second instance, that the lesion of the kidney was originally a hemorrhagic infarct. According to Lippens,[1] with these spon-

1. Lippens, A.: L'hématome périrénal spontané, J. de chir. **11**: 1, 1913.

taneous hemorrhages, dissection of the capsule from the kidney may be either localized or general. An extracapsular hemorrhage may become circumscribed or encysted.

Severe pain in the kidney region, the presence of a tumor-like mass of variable dimensions, and evidence of internal bleeding are important symptoms. The pain is quite variable in character, radiating usually downward, but sometimes toward the shoulder. It may simulate closely the pain of renal colic. At times it is acute. Of great importance is the presence of blood in the urine. In some cases, jaundice, but not marked, has been noted. In only one case[2] has the diagnosis been made before operation.

Perirenal hemorrhages, such as these, need prompt operation and the amount of hemorrhage may make the prognosis grave. Whether nephrectomy should be done or not must depend on the conditions.

POSTINFLUENZAL ALOPECIA

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Alopecia following any severe febrile affection is a common occurrence. Morrisey[1] states that the older literature gives no references to a postinfluenzal alopecia, but Jackson and McMurtry[2] note that, of ninety-seven private patients suffering from a febrile alopecia, influenza was responsible for nine.

There is still some question as to whether the loss of hair after fevers is due to interference with the nutrition or to a toxin acting directly on the hair papillae, although the former view is more generally held. Most of the writers agree that a preexisting seborrhea makes the loss of hair more certain.

To date I have seen fifty patients suffering from alopecia following influenza. Of these, three were men and forty-seven were women. It is highly probable that women are much more apt to consult a physician, men feeling that the affection is trivial and hardly worth troubling about. Several of the more intelligent barbers have told me that practically all of their customers who had had influenza lost much of their hair. As the epidemic was more severe among the young it is only natural that the alopecia patients were all young. Unquestionably the severity of the disease has much to do with the subsequent loss of hair. One third of my patients had had a severe pneumonia, and only five of the fifty had had fever of less than 102.5 F. On the other hand, I am by no means convinced that a preexisting seborrhea played any great part, for twenty of the fifty stated that they had had practically no dandruff, and the scalps of twenty-two of the fifty were absolutely free from any local trouble, care being taken that in no instance were the scalps washed less than ten days before examination. The average time elapsing from the onset of the influenza to the beginning of the alopecia was nine weeks. The shortest time was two weeks, and the longest three months. The amount of hair lost varied greatly. In one case there remained only one tuft of hair on the back of the scalp, and as another extreme, not more than a tenth of the hair was lost. As nearly as can be estimated, largely from the thickness of braids, the average loss of hair was from one third to one half. As a rule only the long hairs fell, and these were almost immediately replaced by short hairs, so it is probable that new hairs simply push out the old hairs that have been damaged. The greatest loss of hair was usually over the anterior and parietal portions of the scalp. The alopecia was diffuse, not patchy, although in two cases there was a tendency toward patchiness. In one instance there was one completely bald area about 1½ inches in diameter. Only twelve of the patients complained of sensitiveness, either local or general, of the scalp. In forty-one cases both scalp and hair were abnormally dry.

Without exception every patient has developed new hair in a very short space of time; in fact, it would probably be difficult to prevent new hair from coming in.

The treatment is simple: First, the patient must be put in good physical condition and reassured that the prognosis is good. Next, the scalp must be cleansed of any seborrhea. This can usually be done by means of a sulphur ointment. Sufficient vegetable oil must be supplied to the hair to keep it glossy; this is best done by wetting slightly a cloth with the oil, and then rubbing it over separate strands of hair. Sufficient massage should be done twice a day to cause a brisk tingle of the scalp. When the scalp is cleansed of seborrhea, a simple stimulating lotion should be used at night. A dram of salicylic acid to 6 ounces of alcohol or bay rum will work perfectly well. There is not the slightest need for treatment with ultraviolet light or with any form of electrical stimulation. Also there is not the slightest excuse for cutting the hair, unless it be to make the ends even, so that it can be more easily dressed. In all cases a light hat should be worn so as not to interfere with circulation or ventilation.

Postinfluenzal alopecia differs in no wise from any other postfebrile alopecia. In practically all cases the prognosis is excellent. Simple cleansing of the scalp and a stimulating tonic with ordinary hygiene of the scalp is all the treatment required.

1621 Connecticut Avenue.

2. Baggerd: Zur Kenntnis der Massenblutungenins Nierenlager, Beitr. z. klin. Chir. **91**: 454, 1914.

1. Morrisey, M. J.: Influenza Alopecia, J. Cutan. Dis. **37**: 177 (March) 1919.

2. Jackson, G. T., and McMurtry, C. W.: A Treatise on Diseases of the Hair, Philadelphia, Lea & Febiger, 1912.

Central Council for Infant Welfare.—A Central Council for Infant and Child Welfare was inaugurated in London recently. The council consisted of representatives of various infants', children's, mothers' and allied organizations, thirteen in number. The object of the council are to coordinate the work of the various national and local voluntary organizations concerned in the care of motherhood, infancy and childhood by organizing the supply and distribution of funds and workers, both voluntary and salaried; to establish, supervise and maintain, with the help of government grants and payments by beneficiaries, such residential institutions or to make such other arrangements for the benefit of the mothers and young children as the constituent societies may from time to time find necessary; to provide and promote a standardization of training for social welfare workers in connection with motherhood, infancy and childhood, and to raise the status and remuneration of the workers. The chairman of the council is Sir Arthur Stanley, and the secretary is Miss Wilson; the offices for the time being will be at 83, Pall Mall.—*Medical Officer* **21**: 122, 1919.

AN INDEX OF BODY RESISTANCE IN ACUTE INFLAMMATORY PROCESSES

AS INDICATED BY EXAMINATION OF THE BLOOD

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Hematology today is recognized as one of our most valuable aids in the diagnosis and prognosis of acute inflammatory processes. Still, we find many who are at a loss as to the significance and interpretation of blood pictures in any given condition. In many hospitals a total leukocyte count alone is made, even though it is a well recognized fact among hematologists that of the two parts of a blood picture, that is, total leukocyte count and differential count, the latter is by far the more valuable, while the most valuable data are obtained from the comparative relation of the total leukocyte count and the polymorphonuclear percentage.

In the early days of blood counting when this branch of hematology was receiving a great deal of attention from investigators, Sondern[1] published a paper which stands out as a high light among the numerous ones appearing on the subject at that time. After careful blood examinations of more than 5,000 cases, including 1,415 surgical cases, he drew hypotheses that have stood the test of time.

His conclusions were in part as follows:

Leukocytosis is largely dependent on body resistance toward infection, and therefore the degree of increase can be no guide to the intensity of the pathological process. Good resistance will produce pronounced leukocytosis, even in slight infections; and poor resistance, but little leukocytosis in slight infection, and possibly none at all in grave infections. . . .

The quantitative relation or differential count of leukocytes offers a far better guide to the status of an inflammatory process, and is one which is not influenced to a perceptible degree by body resistance. Furthermore, the leukocytosis present with a given differential count is a direct indicator of body resistance, which may also be of great clinical value.

He very aptly divided blood findings into three distinct pictures:

1. A relative percentage of polynuclear cells below 70 with an inflammatory leukocytosis of any degree excludes the presence of gangrene or pus at the time the blood examination is made, and usually indicates good body resistance toward infection. For example: serous otitis media with a total leukocyte count of 28,400 and a percentage of polynuclears of 59.7; and acute appendicitis with a total leukocyte count of 25,100 and a percentage of polynuclears of 63.5.

2. An increased relative percentage of polynuclear cells with little or no inflammatory leukocytosis is still an absolute indication of inflammatory process, and the percentage is a direct guide to the severity of the infection. For example: pelvic abscess with 7,200 total leukocytes and 87 per cent. polynuclears; gangrenous appendicitis and spreading general peritonitis with a total of 13,200 leukocytes and 82.4 per cent. polynuclears, and brain abscess following mastoiditis with a total of 11,900 leukocytes and 82.3 per cent. polynuclears.

3. An increased relative percentage of polynuclear cells with a decided inflammatory leukocytosis (most cases like this).

Gibson,[2] making use of Sondern's hypothesis, after a study of several hundred blood pictures in appendicitis and other acute surgical conditions, evolved a "standard chart" which was cleverly arranged to show graphically the disproportion between total leukocyte and polymorphonuclear percentage in any blood examination. He found that "in acute inflammations which are well resisted, the polynuclears are increased approximately one degree per cent. for every one thousand of the total above 10,000." Using millimeter graph paper and allowing a square millimeter to represent each 1,000 increase of the total above 10,000 and likewise each degree per cent. increase above 75, he was able to follow from time to time the change in the "disproportion" in any condition. His conclusions were as follows:

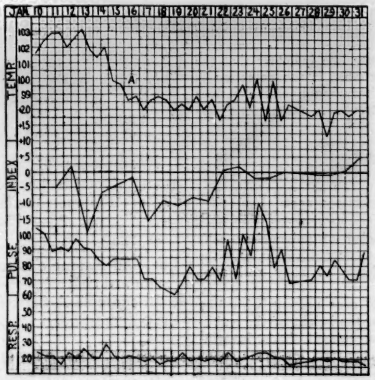

Chart 1 (Case 74).—Temperature, pulse, respiration and index on one chart in a case of influenzal pneumonia: *A*, lysis.

The differential blood count and its relation to the total leukocytosis is the most valuable diagnostic and prognostic aid in acute surgical diseases that is furnished by any of the methods of blood examination.

It is of value chiefly in indicating fairly consistently the existence of suppuration or gangrene, as evidenced by an increase of the polynuclear cells disproportionately high as compared to the total leukocytosis. The greater the disproportion the surer the findings, and in extreme disproportion, the method has proved itself practically infallible.

As the relative disproportion between the leukocytosis and the percentage of polynuclear cells is so much more valuable than the findings based on a leukocyte count alone, this latter method should be abandoned in favor of the newer and more reliable procedure.

However, Gibson's chart met with the objection that if many successive counts were entered on the same chart, it was apt to result in a jumble of lines that were difficult to follow. So Wilson[3] modified the "standard chart." After using it at the Mayo Clinic in several hundred cases, his conclusions were as follows:

1. Sondern's hypothesis, that the polynuclear percentage is an index of infection, the total leukocytosis an index of body reaction, and their proportionate relationship an index of resistance, seems to be supported. The more important exceptions to this are in moribund cases and perhaps children.

2. As practically applied in early appendicitis cases, a disproportional polynuclear increase, i. e., a rising resistance line,

1. Sondern, F. E.: Present Status of Blood Examinations in Surgical Diagnosis, M. Rec. 67: 452-455 (March 25) 1905.

2. Gibson, C. L.: Value of Leukocyte Count in Acute Surgical Disease, Ann. Surg. pp. 485-499, 1906.

3. Wilson, L. B.: Value of Sondern's Differential Leukocyte Resistance Line in the Diagnosis and Prognosis of Acute Appendicitis, Collected Papers of the Mayo Clinics, 1905-1909, p. 280.

indicates a more or less severe infection, which is not being properly cared for by the body. The higher and longer this line, the more serious the case.

3. A proportional polynuclear percentage or a disproportional polynuclear decrease, if well marked, indicates mild or well-cared-for infection.

4. The value to the surgeon in early cases is but little, since most early cases are operated on anyway. It may be of some value negatively in indicating that a supposedly acute exacerbation of chronic appendicitis is not present.

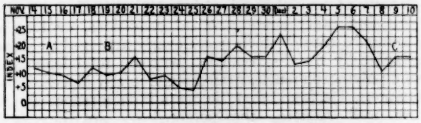

Chart 2 (Case 6).—Positive index of resistance in an uneventful convalescence in influenzal pneumonia: *A*, improving; *B*, good; *C*, lungs clear.

5. In cases between the fourth and eleventh days, the resistance line is of great value to the surgeon in indicating the patient's poor resistance and the necessity for immediate operation. The operative findings in the cases bear out the leukocyte determination with wonderful accuracy.

6. A horizontal or falling resistance line indicates that the patient is taking care of the infection. If the infection is severe, as shown by a high though falling line, the patient may perhaps best be given medical treatment rather than submitted to operation.

After further study of this subject, Sondern,[4] in a later paper, made the following observations which are significant in considering a blood picture from the point of view in question:

The increase in the relative number of polynuclear cells is an indication of the severity of toxic absorption, and the degree of leukocytosis is an evidence of body resistance toward infection.

Purulent exudates were rarely if ever present with low polynuclear percentage irrespective of the height of the leukocyte count, while high polynuclear percentages almost invariably indicated their presence, even if the total leukocyte count was low.

He also noted the following exceptions to the foregoing statement:

1. Children present a more variable normal polymorphonuclear percentage, and therefore Gibson's resistance chart is not applicable to them.

2. In conditions in which pus is confined so that no toxic absorption occurs, or when the purulent exudate is of tuberculous or typhoid origin, there is no leukocytosis and no polymorphonuclear increase.

3. Mixed infections with or following tuberculosis or typhoid does not show as high polymorphonuclear percentage as primary streptococcic or staphylococcic infections.

4. The exact nature of infection has direct bearing on the degree of polymorphonuclear increase, some organisms causing a higher percentage than others.

THE INDEX OF RESISTANCE

Sondern's hypothesis as applied by Gibson and modified by Wilson deserves a wider application and more general utilization in interpreting blood pictures. Perhaps the chief reasons that it has not been used are that the work is not generally known, and that such interpretation depends on the presence of the "standard chart." As these charts are not always at hand, and if used, require an extra sheet on the hospital record with that added expense, this very valuable aid has been neglected.

The "resistance line" is simply a visual expression of the disproportion between the total leukocyte count and the polymorphonuclear percentage, starting with the normal figures for these factors, and assuming that they normally increase in the ratio of 1 per cent. of polymorphonuclears to 1,000 total leukocytes per cubic millimeter. Therefore, we can express the same thing in the formula.[5]

$$(T—10)—(P—70)=\text{I. R.}$$

T is the digits in the thousandths place in any given leukocyte count; 10 is the digits in the thousandths place in the high normal leukocyte count; *P* is any given polymorphonuclear percentage; 70 is the high normal polymorphonuclear percentage; I. R. is the "index of resistance."

Example A:

Total leukocyte count.....15,000
Polymorphonuclear percentage.. 80
(15—10)—(80—70)=—5 I. R.

Simple mathematics reduces the foregoing formula to:

$$T—(P—60)=\text{I. R.}$$

Example A:

15—(80—60)=15—20=—5 I. R.

Example B:

Total leukocyte count.....25,000
Polymorphonuclear percentage.. 75
25—(75—60)=+10 I. R.

Example A would correspond to a rising resistance line, and Example B to a falling resistance line on the "standard chart."

In example A there is a disproportionate increase in the polymorphonuclears, or in other words, the severity

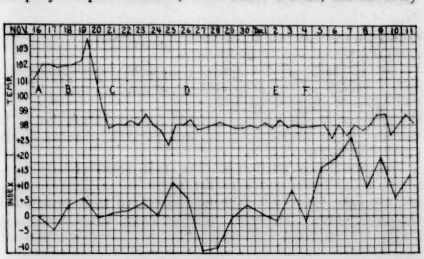

Chart 3 (Case 11).—Sharp drop in resistance index with excess strain of getting up too soon in a case of influenzal pneumonia: *A*, critical; *B*, condition good; *C*, crisis; *D*, let out of bed too soon; *E*, improving; *F*, up today.

of the infection is comparatively greater than the reaction of the body to it, with a consequent "negative index." In Example B there is a good reaction to a comparatively mild infection, with a resultant "positive index."

Although there is a rather wide range in what is considered normal total leukocyte and polymorpho-

4. Sondern, F. E.: The Value of the Differential Leukocyte Count in Diagnosis, Am. J. M. Sc. **32**: 889 (Dec.) 1906.

5. Some time previous to my entrance into the army, Miss Marie Bump and I, at the Bierce Memorial Laboratory, St. Anthony's Hospital, Oklahoma City, evolved a formula which in a single figure essentially expresses the same thing as the "resistance line" of Gibson and Wilson.

nuclear counts, it was thought best to consider 10,000 as the extreme upper limit of normal total white count, and 70 per cent. as the corresponding polymorphonuclear normal.

Use of the formula $T-(P-60)=$I. R. gives one a quick and tangible interpretation of a blood picture in any acute inflammatory process. The positive or negative figures can be entered on a record sheet in a vertical column from day to day, and a glance down the column quickly gives one an idea of the blood resistance index. Or the index figure may be plotted daily along with temperature, pulse and respiration, and so produce a graphic picture corresponding with these signs (Chart 1).

At any time one can readily calculate mentally the index from any white and differential count, and thus quickly decide the diagnostic or prognostic value of the blood picture.

Although this study includes no observations in acute surgical cases, the index is obviously of the same value in this class of cases as the Gibson "standard chart." As this has already been used extensively and the years. Each day the clinical condition temperature, pulse and respiration were checked up with the blood findings. Altogether 1,710 total leukocyte and 1,710 differential counts were made.

RESULTS IN PNEUMONIA

Of the forty-six pneumonia patients observed, seventeen died, twenty made a more or less uneventful recovery, and the remaining nine developed complications and intercurrent infection. Of those who died, four developed empyema during the course of the pneumonia.

In all cases of uneventful recovery, the index became positive and remained so (Chart 2). Often this was quite high early in convalescence, but gradually came back toward the normal.

In seventeen cases terminating in death during the acute stage of the disease, the index was very markedly negative, and in general the lower the index the more critical the condition of the patient appeared. In most instances, this negative index continued to the end. However, in six out of seventeen deaths, there

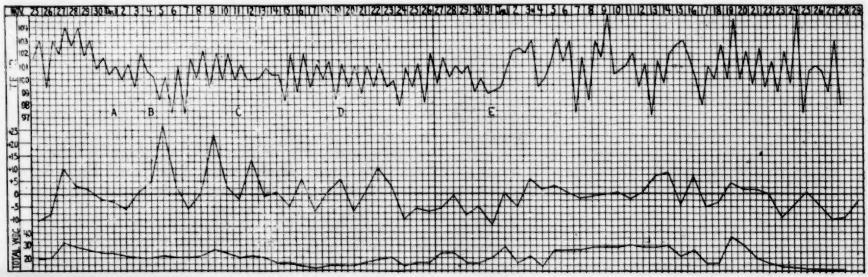

Chart 4 (Case 16).—Temperature, index of resistance, and total leukocyte count in a case of influenzal pneumonia with complications of acute suppurative otitis media and bilateral empyema: *A*, discharge from right ear; *B*, paracentesis, right ear; *C*, swelling and pain in right leg; *D*, no fluid on aspiration; *E*, pus on aspiration and costatectomy discovered clinically. At necropsy there was bilateral empyema; one side undrained.

statements of the early workers corroborated, it was not thought necessary to include any such cases here.

This study includes observations in 105 cases of various diseases, thus distributed: pneumonia, forty-six; influenza, thirty-five; empyema, twelve; measles, twelve.

The work was begun with the purpose of determining the value of the index of resistance as an aid in prognosis, and in the early detection of complications, such as empyema and otitis media. Incidentally, other interesting observations have been made.

Daily total leukocyte counts and differentials were made in each case for periods varying from three to sixty-five days. Counts were begun on the same day the patient entered the hospital in nearly all cases, and the study was terminated either by death of the patient or dismissal from the hospital; or, the convalescence being well advanced, it was considered unnecessary to follow the case farther. Eight large squares on a Levy hemocytometer were counted in the estimation of the number of total white cells, and 300 cells were counted in each differential. Particular attention was given to obtaining even, uniform blood smears. Blood was collected at approximately the same time each day from any given patient, thus ruling out any changes that might arise due to exercise, meals, baths, etc. Our patients were all men between the ages of 21 and 31 was observed a sharp and marked antemortem rise to positive. This occurred usually from twenty-four to forty-eight hours prior to death.

In the event of an intercurrent infection occurring during convalescence, or the onset of a complication, a positive index suddenly became negative and remained so for several days before the body apparently won the battle and the index again rose to plus. A similar phenomenon was seen in a case in which the patient was allowed out of bed too soon (Chart 3). In cases of empyema or purulent otitis media which were undrained for some time, the index curve was of an irregular saw-tooth character, rising above and dropping below the zero line, not unlike a septic temperature curve (Chart 4). With complete drainage, the curve rose to positive.

The blood index is as sensitive an indication of trouble as the temperature curve or other clinical signs. A negative index was observed coincidentally with a rise of temperature in a number of cases, and often slightly before the temperature was affected. Moreover, in convalescents who were not improving as rapidly as was expected, a hyperleukocytosis and a negative or irregular index were noted to persist long after the temperature, pulse and respiration had become normal. Often, no other signs of trouble could be found besides the blood picture and the apparent

lack of response on the part of the patient (Chart 1). This feature was noted particularly in influenza and measles cases.

RESULTS IN INFLUENZA AND MEASLES

The blood picture in these two conditions was so similar that we can easily discuss them together. Development of complications or the onset of other mild infections, such as bronchitis, alveolar abscess, tonsillitis and arthritis, was marked by a sudden drop of the leukocytic index to negative, returning in a few days to positive, apparently as the resistance of the

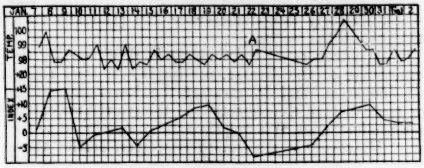

Chart 5 (Case 69).—Index the first sign of trouble in a case of influenza with arthritic complications: *A*, arthritis, discovered clinically.

individual increased and overcame the infection (Chart 5). In these conditions, a negative index was frequently seen to persist for days after the temperature, pulse and respiration became normal. This occurred in that class of individuals who do not "pick up" readily after measles and influenza, but continue weak and languid and altogether "below par." As these patients improved, the index gradually rose to positive (Chart 1).

Early in influenza and measles the total leukocyte count was normal or slightly reduced. Only one in thirty-five cases of influenza and two in twelve cases of measles showed a hypoleukocytosis below 5,000 per cubic millimeter. On the other hand, after the disappearance of the acute symptoms and during convalescence, it was not unusual to find the count ranging anywhere from 12,000 to 25,000 cells per cubic millimeter. Parallel to this the temperature, pulse and respiration were normal, or nearly so, and in most cases no cause for the hyperleukocytosis could be found. In a few cases, mild infections, such as chronic catarrhal pharyngitis, chronic tonsillitis, and chronic apical abscesses about the teeth, were the only apparent cause. Influenza and measles appear to render the hematopoietic organs very sensitive to even the slightest stimuli from the mildest infections, to which they respond with unusually high production of polymorphonuclear cells.

RESULTS IN EMPYEMA

In empyema that was draining well and in which the body was overcoming the infection, the blood index remained steadily positive. However, if an acute disease, such as tonsillitis, occurred during such a convalescence, the index dropped suddenly and often before any other signs appeared (Chart 6). In cases of incomplete drainage, such as those with walled off pockets, or clogging of the drainage tube or its displacement, the index was prone to simulate a septic temperature curve.

Eosinophilia was a rather common occurrence in our empyemas. In seven out of fourteen cases, eosinophils appeared in percentages varying from 6 to 31.

COMMENT

It is estimated that with the most careful and skilful technic, the factor of error in the total white count is about 5 per cent. With careful, even preparation of smears, the error of differential counting is no more than 2 per cent. Allowing for these factors of error, there should be a variation of no more than three or four points from day to day in the index, other things being equal. Practically, there is actually a daily fluctuation of from five to eight points, which must be considered in the interpretation of any given blood picture. There is probably a slight normal variation from day to day in the total leukocyte and polymorphonuclear count for any given individual. Generally speaking, the greater the departure from the normal, the more significant the index. Also, just as a single temperature observation is of comparatively small value in judging the course of any given condition, so a single blood picture is not to be relied on. A daily blood picture is ideal, but may encounter objections on account of the large amount of work involved. However, an index determination every second or third day during the course of the acute infectious diseases is desirable and not at all unreasonable.

There is a very wide variation in the absolute response of the leukocytes to any infection independent of the severity of the infection, and therefore the total leukocyte count when taken alone is of little or no value in getting at the exact condition of the patient, or the degree of the infection.

It might be well to warn against dogmatic dependence on the index alone. It should be used only as a factor in completing the study of any given case, and should always be considered in the light of other clinical and laboratory findings.

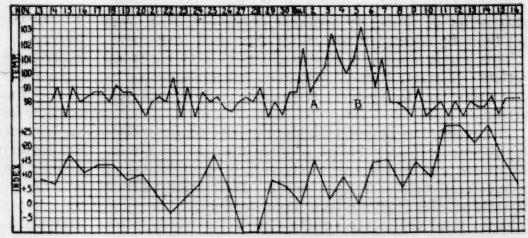

Chart 6 (Case 4).—Empyema; tonsillitis and peritonsillar abscess during convalescence; negative index four days before other signs of tonsillitis; *A*, tonsillitis; *B*, peritonsillar abscess.

I feel that this study has not been exhaustive enough to determine the true value of the leukocyte index in pneumonia, influenza, measles and empyema, and this report is made with the hope that others will help by trial in this determination and possibly find assistance in its application.

CONCLUSIONS

When used alone, neither the total leukocyte nor the differential count will give the examiner a true idea of the degree of an infection or the condition of the patient.

Sondern's hypothesis that the proportional relation of the total leukocytes and the polymorphonuclear percentage is an index of body resistance seems to be true.

A ready and tangible method of determining the degree of resistance from the leukocytic examination, that is, total leukocyte and polymorphonuclear percentage, is afforded by the index of resistance, which expresses essentially the same thing as Gibson's "resistance line," but is a more accessible means of interpreting a blood picture than the "standard chart."

The index of resistance has the same value in acute surgical conditions as Gibson's "resistance line."

The blood index is as sensitive an indication of change in the condition of an acute inflammatory process as the temperature curve and other clinical signs. In some instances it has seemed to be more delicate than any other sign.

In acute infectious diseases, such as pneumonia, influenza, and measles, the leukocyte index is of value chiefly as a danger signal of the onset of septic complications. The lower and more persistent the index, the more certain is the sign and the more serious is the condition.

THE BLOOD PICTURE OF THOSE INOCULATED WITH INFLUENZA VACCINE *

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One of the most widely discussed questions at the present time is the relation, if any, that exists between *B. influenzae* (Pfeiffer's bacillus) and the recent pandemic. From the bacteriologic point of view it would seem that many investigators throughout the world have serious doubts as to the etiologic significance of the influenza bacillus in this condition. Many believe that some form of micrococcus is the exciting agent, while other well-known men, such as Hektoen and Vaughan, state that it is "a disease of unknown origin."

In the clinical reports of the epidemic, the majority of observers agree as to the presence of a more or less well-marked leukopenia. Little, Garofalo and Williams[1] report that the present epidemic is not characterized by a sharp leukocytosis and polynucleosis, but rather by a very slight leukocytosis with a proportional lymphocytosis of the small mononuclear variety. Keegan,[2] in the examination of twenty-eight early cases from the first to the fourth day, found an average count of 6,700 white blood cells with 63.7 per cent. polymorphonuclears and 33.3 per cent. lymphocytes. He states that the white blood cell count in uncomplicated cases is below the normal. Nuzum, Pilot, Stangel and Bonar[3] noted that blood counts taken early after the initial symptoms exhibit a striking leukopenia as low as 1,800 and averaging from 3,000 to 4,000. With the onset of pneumonia, a definite leukocytosis quite commonly appears. Strouse and Bloch[4] note that a leukopenia was the rule, except when an empyema developed. Keeton and Cushman[5] report that influenza has a high (46.6) percentage of leukopenia in the early stages. Blanton and Irons[6] made white blood cell counts in 580 cases in the prepneumonia stage, of which 70 per cent. showed less than 8,000 white cells. This leukopenia was the most impressive feature of the blood count. The polymorphonuclears showed but slight increase over the normal, nor was there any conspicuous lymphocytosis. Of 1,000 white cell counts in pneumonia patients, 67.5 per cent. showed 8,000 or less. Ely, Lloyd, Hitchcock and Nickson[7] state that of seventy-five white cell counts, twenty-five gave 5,000 or less, thirty-four between 5,000 and 10,000, and sixteen over 10,000. Brem, Bolling and Casper[8] found that in the influenzal stage leukopenia was practically always present, and at first it appeared to be a feature of the pneumonia stage. The average count in eighty-six influenza cases was 6,000, and in 148 pneumonia cases 6,800. Synnott and Clark[9] made counts in more

TABLE 1.—RESULTS OBTAINED IN ONE HUNDRED AND FIFTY-EIGHT CASES AT VARYING PERIODS AFTER INOCULATION

Character of Case Counted	Number of Cases	Average Age	Total		Differential				
			Red Blood Cells	White Blood Cells	Neutrophils	Eosinophils	Basophils	Lymphocytes	Mononuclears
Normal	1	22.0	4,680,000	6,800	62.0	5.0	1.0	30.0	2.0
Influenza	11	26.3	4,985,000	8,041	62.5	1.6	0.0	32.2	3.7
Influenza and inoculation	3	31.7	4,660,000	5,417	61.0	0.7	0.0	35.3	3.0
Inoculation alone:									
After first	4	28.7	5,130,000	10,050	71.8	1.2	0.0	22.7	4.3
After second	7	29.7	5,501,000	13,190	72.5	0.0	0.0	25.5	2.0
After third:									
1 day	5	31.4	5,104,000	9,116	62.2	1.4	0.0	31.2	5.2
2 days	2	29.5	5,100,000	10,500	65.0	3.0	0.0	28.0	4.0
3 days	1	21.0	4,720,000	7,000	63.0	1.0	0.0	36.0	0.0
4 days	14	27.8	4,972,000	8,480	62.4	2.8	0.3	32.1	2.4
5 days	16	26.9	4,708,000	7,341	63.3	2.2	0.2	31.6	2.7
6 days	18	25.8	4,929,000	7,531	63.1	3.1	0.3	30.6	2.9
7 days	1	33.0	5,200,000	9,700	83.0	0.0	0.0	15.0	2.0
8 days	3	35.0	5,140,000	7,717	63.7	0.3	0.0	33.7	2.3
9 days	17	24.2	4,850,000	8,480	62.5	0.7	0.4	34.4	2.0
10 days	10	29.4	4,837,000	9,140	64.7	0.7	0.2	31.2	3.2
11 days	14	27.7	4,510,000	9,186	61.8	0.4	0.4	35.4	2.0
12 adys	10	30.2	5,343,000	9,320	67.0	0.3	0.2	30.3	2.2
13 days	1	40.0	4,680,000	8,200	64.0	0.0	1.0	34.0	1.0
14 days	1	45.0	4,760,000	11,700	70.0	1.0	0.0	27.0	2.0
15 days	3	31.3	4,733,000	7,300	62.0	1.3	0.0	34.4	2.3
16 days	4	32.3	5,335,000	6,438	66.7	0.3	0.0	31.0	2.0
17 days	1	34.0	3,900,000	7,800	59.0	1.0	2.0	34.0	4.0
18 days	1	22.0	4,320,000	7,200	71.0	1.0	0.0	25.0	3.0
19 days	3	25.0	5,030,000	8,900	68.7	0.7	0.3	27.0	3.3
20 days	2	29.0	5,705,000	5,500	46.0	2.0	0.5	51.0	0.5
21 days	2	23.5	4,035,000	7,700	64.0	0.5	1.0	33.5	1.0
22 days	1	28.0	4,640,000	7,600	69.0	0.0	0.0	28.0	3.0
30 days	1	22.0	4,880,000	7,500	58.0	1.0	0.0	40.0	1.0
32 days	1	26.0	5,840,000	8,200	57.0	1.0	0.0	41.0	1.0
Total	158	27.8	4,940,000	8,451	63.6	1.4	0.3	32.1	2.6

*From Yale Army Laboratory School.

1. Little, Garofalo and Williams: Lancet **2**: 34 (July 13) 1918.
2. Keegan, J. J.: Prevailing Pandemic of Influenza, J. A. M. A. **71**: 1051 (Sept. 28) 1918.
3. Nuzum, J. W.; Pilot, Isadore; Stangel, F. H., and Bonar, B. E.: Pandemic Influenza and Pneumonia in a Large Civil Hospital, J. A. M. A. **71**: 1562 (Nov. 9) 1918.
4. Strouse, S., and Bloch, L.: Notes on the Present Epidemic of Respiratory Disease, J. A. M. A. **71**: 1568 (Nov. 9) 1918.
5. Keeton, R. W., and Cushman, A. B.: The Influenza Epidemic in Chicago, J. A. M. A. **71**: 1962 (Dec. 14) 1918.
6. Blanton, W. B., and Irons, E. E.: Preliminary Laboratory Report of a Recent Epidemic of Acute Respiratory Infection at Camp Custer, Mich. J. A. M. A. **71**: 1988 (Dec. 14) 1918.
7. Ely, C. F.; Lloyd, B. J.; Hitchcock, C. D., and Nickson, D. H.: Influenza as Seen at the Puget Sound Navy Yard, J. A. M. A. **72**: 24 (Jan. 4) 1919.
8. Brem, W. V.; Bolling, G. E., and Casper, E. J.: Pandemic "Influenza" and Secondary Pneumonia at Camp Fremont, Calif., J. A. M. A. **71**: 2138 (Dec. 28) 1918.
9. Sinnott, M. J., and Clark, E.: Influenza Epidemic at Camp Dix, N. J., J. A. M. A. **71**: 1816 (Nov. 30) 1918.

than 700 cases and found an absence of leukocytosis in the more severe ones, and during the acute stage of those running a more favorable course. The average white cell count during the acute stage was about 5,000, the lowest recorded being 1,200. Gotch and Whittingham[10] found a distinct leukopenia (3,000 to 4,500) at the height of the fever. Cole[11] found that there was usually a leukopenia of from 2,400 to 9,000 in purely toxic cases, and even in extensive bronchopneumonia.

In averaging, as well as possible, the figures given in the foregoing quotations, we get a white blood cell count of approximately 5,700 per cubic millimeter. As one of the methods employed in combating this epidemic was the use of an influenza vaccine made up of numerous strains, it was thought that some information might be obtained by making white cell counts of those who received the vaccine. If the primary infecting agent was the bacillus of Pfeiffer, and if, according to the clinical reports, such infection was accompanied by a leukopenia, it would seem logical to suppose that the injection of the organisms should cause a more or less similar reaction.

TABLE 2.—RELATION EXISTING BETWEEN THE DEGREE OF REACTION AND THE BLOOD CHANGES

Reaction	Cases	Per Cent.	White Blood Cells	Total Polymorphonuclears	Total Mononuclears	Age	Days After Inoculation
++	16	11.2	8,765	66.5	33.5	32.2	7.9
+	7	4.9	7,890	65.0	35.0	29.5	8.4
±	21	14.7	8,647	66.3	33.7	30.5	11.0
No reaction	99	69.2	8,563	65.2	34.8	28.5	9.0

TABLE 3.—DISTRIBUTION OF WHITE CELLS IN FORTY-EIGHT OFFICERS

Number of Cells	Counts	Per Cent.
Below 6,000	5	10.4
6,000 to 7,000	4	8.3
7,000 to 8,000	17	35.4
8,000 to 9,000	6	12.5
9,000 to 10,000	5	10.4
10,000 to 12,000	5	10.4
12,000 and up	6	12.6
Total	48	100.0

Average age, 34.9 years.
Days after inoculation, 10.98.

TABLE 4.—DISTRIBUTION OF WHITE CELLS IN ONE HUNDRED AND TEN ENLISTED MEN

Number of Cells	Counts	Per Cent.
Below 6,000	5	4.5
6,000 to 7,000	22	20.0
7,000 to 8,000	32	29.0
8,000 to 9,000	21	19.1
9,000 to 10,000	10	9.1
10,000 to 12,000	13	11.8
12,000 and up	7	6.5
Total	110	100.0

Average age, 24.7.
Days after inoculation, 7.71.

The present report gives the results of blood counts made in 158 cases—110 enlisted men and 48 officers. Of this number, 143 were apparently normal individuals who had received the influenza inoculation. Of the remaining fifteen, there were eleven who had had influenza, three who had had influenza and the inoculation as well, and one who had had neither the disease nor the inoculation. This work was done during November, 1918, at the Yale Army Laboratory School, New Haven, Conn., Col. Charles F. Craig, M. C., in command.

From an examination of the accompanying tables, it would seem that there was little effect, if any, on the total count of white cells, or on their relative percentages. Nor does the length of time intervening after the inoculations make any difference. There also seemed to be no relationship between the severity of the reaction and the number of white cells, those having no reaction giving practically the same average as those having the most severe.

TABLE 5.—FINAL AVERAGES OF DISTRIBUTION OF WHITE CELLS FOR TOTAL OF ONE HUNDRED AND FIFTY-EIGHT COUNTS MADE

Number of Cells	Counts	Per Cent.
Below 6,000	10	6.3
6,000 to 7,000	26	16.4
7,000 to 8,000	49	31.0
8,000 to 9,000	27	17.1
9,000 to 10,000	15	9.5
10,000 to 12,000	18	11.3
12,000 and up	13	8.3
Total	158	100.0

Average age, 27.8 years.
Days after inoculation, 8.73.

The final average gave a total of 10,000 white cells per cubic millimeter for the officers, and 7,700 for the enlisted men.

A study of the tables would indicate that *B. influenzae* when injected subcutaneously into an individual does not have any effect on the tissues concerned in the formation of the white cells. That it is not due to a lack of effect on the individual is shown by the fact that even in those instances in which there was a marked constitutional reaction there were still no changes in the blood picture. Since the general opinion of clinicians is that a leukopenia is one of the characteristic findings in the recent epidemic, it would seem justifiable to consider the findings here reported as an additional argument against the bacillus of Pfeiffer being the causative agent.

TABLE 6.—SUMMARY OF FINDINGS IN THE ONE HUNDRED AND FIFTY-EIGHT CASES EXAMINED

Character of Cases Counted	Number of Cases	Average Age	Total		Differential				
			Red Blood Cells	White Blood Cells	Neutrophils	Eosinophils	Basophils	Lymphocytes	Mononuclears
Total	158	27.8	4,940,000	8,451	63.6	1.4	0.3	32.1	2.6
Inoculations only	143	27.9	4,944,000	8,565	63.9	1.4	0.2	32.0	2.5
Not inoculated	15	27.1	4,896,000	7,374	62.1	1.6	0.1	33.1	3.2
Total officers	48	34.9	5,125,000	10,000	65.6	0.4	0.2	31.5	2.3
Total enlisted men	110	24.7	4,859,000	7,776	63.0	1.8	0.3	32.4	2.7

Counts taken on officers on average of 10.98 days after last inoculation.
Counts taken on enlisted men on average of 7.71 days after last inoculation.

Beginning of Epidemics.—Consider every case of typhoid you discover as the first one of an epidemic.—*Weekly Bulletin, A. E. F.*

10. Gotch and Whittingham: Brit. M. J. 2: 82 (July 27) 1918.
11. Cole: Brit. M. J. 2: 566 (Nov. 23) 1918.

Clinical Notes, Suggestions, and New Instruments

A ONE-PIECE SURGICAL OPERATING SUIT

W. WAYNE BABCOCK, M.D., FORT MCPHERSON, ATLANTA, GA.
Lieut.-Col., M. C., U. S. Army

All surgeons have doubtless experienced the inconvenience of having buttons drop off of operating suits at inopportune moments. Some may have also found separate trousers a disadvantage. To such the one-piece suit here described and illustrated will surely appeal. This one-piece suit has no buttons, but is secured by two tapes. It is adjustable to considerable variations in size, although in a large service it may be well to provide two sizes. The idea for this garment was developed by Mrs. T. H. Hinman and the supply was furnished by the Atlanta branch of the Red Cross. We feel greatly indebted to the designer and to the Red Cross for developing and supplying us with this garment, which we find very useful and convenient.

Fig. 1.—The manner of securing the one-piece surgical operating suit by two tapes.

Fig. 2.—The manner of tying the tapes in front.

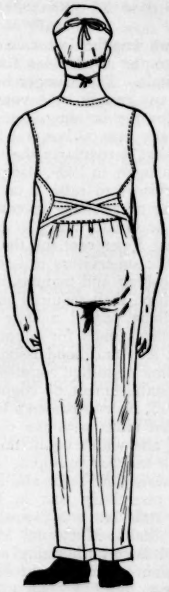

Fig. 3.—The manner of adjusting the tapes at the back.

TUBERCULIN TREATMENT OF TUBERCULOUS EPIGLOTTIS

HERBERT F. GAMMONS, M.D., CARLSBAD, TEXAS

The tissue changes resulting from injection of tuberculin in or near tuberculous foci have been most remarkable in some instances.

White and Marcy[1] report good results from such treatment of a tuberculous tongue; Patterson[2] gives his final results in eye conditions treated similarly, and Pottenger[3] remarks on the good results obtained in laryngeal cases treated by tuberculin locally.

The following case is of interest and study of similar cases may help us to get a better understanding of immunity in tuberculosis:

S. A., showing a moderately advanced case running normal temperature and pulse, complained of irritation in the throat. Examination of the larynx revealed a localized area of inflammation on the upper right of the epiglottis posteriorly. This was treated with different local applications, but regardless of treatment the area extended and ulceration with slight edema resulted. Amputation was considered, but it was thought best first to try tuberculin.

March 15, 0.00001 mg. bacillary emulsion was injected at the base of the ulcer. In twenty-four hours there was a slight local reaction with some swelling and redness and slight elevation of temperature. Four days later 0.0001 mg. of the same variety of tuberculin was injected. One week later 0.001 mg. of the same variety of tuberculin was injected. In twenty-four hours a marked general and local reaction resulted. The epiglottis was markedly swollen, deglutition was difficult and temperature went to 104 F. Fever rapidly subsided as did the swelling in the epiglottis. The ulcerated area is now covered with new epithelium, and there is no evidence of acute inflammation. The epiglottis on the right side is a trifle thicker, but there are no subjective symptoms referable to the larynx. The patient's general condition is better than before the reaction. The patient was taking artificial pneumothorax at intervals during the treatment.

1. White, W. C., and Marcy, C. H.: Bull. Johns Hopkins Hosp. **77**: 174 (May) 1917; abstr. J. A. M. A. **68**: 1663 (June 2) 1917.
2. Paterson, R. C.: Am. Jour. Med. Sc. **157**: 198 (Feb.) 1919; abstr. J. A. M. A. **72**: 875 (March 15) 1919.
3. Pottenger: Clinical Tuberculosis, St. Louis, C. V. Mosby Company, 1918.

Effect of Child Hygiene.—The child hygiene work that saves babies increases the health and the welfare of mothers and children.—*Public Health News*, New Jersey.

Special Article

HOSPITAL SERVICE IN RURAL COMMUNITIES

A PRELIMINARY REPORT

PREPARED BY ERNST C. MEYER, DIRECTOR OF THE DEPARTMENT OF SURVEYS AND EXHIBITS OF THE ROCKEFELLER FOUNDATION INTERNATIONAL HEALTH BOARD

NEW YORK

(*Concluded from page 1367*)

PART IV. LEGISLATION CONCERNING RURAL HOSPITALS

LAWS MAKING THE ESTABLISHMENT OF COMMUNITY HOSPITALS OPTIONAL

Iowa was the first state to pass a law allowing counties to tax themselves for the purpose of providing hospitals. The Munger bill, passed in 1909, provides that any county by a vote of its electors may levy a tax for the building, equipment, and maintenance of a county general hospital for the care of all classes of the sick, particularly the tuberculous.

Michigan, in 1909, also passed a law allowing county supervisors to raise a tax for constructing or maintaining or assisting to construct and maintain a hospital or sanatorium. In 1913, this law was amended so that 5 per cent. of the county electors could petition the supervisors to issue bonds and levy a tax for establishing and maintaining a public hospital. Such a petition then required submission to a general vote.

Indiana passed a state law in 1913 allowing the necessary funds for county hospitals to be raised by a tax levy and bond issue. In the same year, North Carolina permitted counties to vote on bond issues for the establishment of county or community hospitals. In 1915, Kansas passed a law along similar lines which allowed cities with the commission form of government, and with a population of from 3,000 to 6,000, to levy a tax for equipping and maintaining a hospital. Missouri, New York, and South Carolina have enacted laws resembling that in force in Iowa. The New York state law is a township law. In addition, Colorado, Idaho, Maryland, Montana and Vermont have passed laws authorizing cooperation in hospital construction on the part of different counties, cities, and towns.

LAWS MAKING THE ESTABLISHMENT OF COMMUNITY HOSPITALS COMPULSORY

A compulsory law for the establishment of county hospitals was passed in Texas only. This law, enacted in 1913, makes it mandatory for counties of more than 20,000 population to build and operate general hospitals, and compels them to tax themselves. Counties of less than 20,000 are permitted to join with other counties, taxing themselves pro rata to help pay for both hospital construction and operation.

EFFORTS TO SECURE LEGISLATION CONCERNING HOSPITALS

The people of Mohave County, Arizona, at a recent election adopted a resolution petitioning the state legislature to pass a law authorizing county boards to establish hospitals in which persons, whether able or unable to pay for treatment, might be accepted.

The Northwestern Nebraska Medical Society recently petitioned the legislature of the state to enact a measure enabling cities of the second class to vote bonds and levy a tax for the establishment of hospitals. The proposed measure is modeled on the Iowa county hospital law except that it enables municipalities instead of counties to erect and operate the hospitals.

Pennsylvania has introduced a bill for the establishment of a cottage state hospital at Honesdale. South Dakota and Utah have drafted bills for the establishment of county hospitals. It was also reported that the legislature of Utah would be called on to consider a county hospital bill.

POPULAR ACTION UNDER HOSPITAL LAWS

Nov. 8, 1910, eight counties in Iowa asked for a vote concerning hospitals. Washington County was the only one that succeeded in having the tax levied. The hospital is reported to have been a success from the start. In the same year that the Washington County Hospital was opened, a further county hospital was being built for Jefferson County. Up to December, 1916, so far as is known, the hospital issue was before the people for a vote in twenty-two counties. It was defeated in twenty counties and carried in the two counties mentioned above.

It is not known what progress was made in Michigan. Indiana has two county hospitals, at least one of which, the Bartholomew County Hospital, was opened in December, 1916, shortly after the bill had passed. Kansas has two county hospitals, but it is not known whether they were opened before or after the passing of the law. The same applies to the Anderson County Hospital in South Carolina. In North Carolina, two counties (North Hampton and Pitt) waged campaigns but lost the election. In one county (Lenoir) the bond issue was voted. No hospitals had been built in this state up to March 7, 1917.

According to latest reports, the compulsory hospital law in Texas was in full operation. The law specified that the following cases were to be cared for in these hospitals; medical, surgical, gynecologic, obstetric, children, tuberculosis, and the communicable diseases. Construction of hospitals of this type is now under way in various parts of the state.

PART V. SOME THINGS THAT NEED TO BE KNOWN TO SOLVE THE COMMUNITY HOSPITAL PROBLEM

In its simplest elements, the hospital problem resolves itself into two parts: provision of the hospital plant in which service is to be rendered, and provision of the services for which the plant is created. The provision of the plant in turn resolves itself into two subsidiary problems: How large shall the building be, that is, how many beds should the hospital contain, and where should it be located? A correct answer to the first question is desirable in order that there may be economy in the use of funds. A correct answer to the second question is desirable in order that the community may be served with the least possible waste in time and money, and the smallest individual inconvenience or effort. In seeking an answer as to the size of the building, it is necessary to gain a definite idea concerning the extent of hospital needs. This presupposes, first, a sickness rate formula, and second, a hospital case formula, the latter obviously being

dependent on the former. Unfortunately, as emphasized in Part I, little information is at present available concerning either the rate of sickness or the proportion of all cases of sickness that should have hospital treatment. Estimates and guesses have frequently been made, but they are not based on definite statistical data.

Before a correct sickness rate formula can be worked out, it will be necessary to secure facts which will serve to indicate the trend of sickness in the future. A hospital is not a thing of a day. It is intended to endure through many years, and even generations. Decrease or increase in sickness, were it to follow a definite course, might be a matter of serious import in the original planning of the building.

It is well known that the trend of the death rate among modern civilized populations is steadily downward. It would seem to follow that the sickness rate will likewise continue to be downward. There are, however, numerous uncertain elements. The speed of this downward tendency, as is obvious, will depend, among other things, on the accomplishments of scientific medicine and their application in a practical way, both through the medium of the private practicing physician and of the public health officer. Striking results have been secured in the recent past. It is not unlikely or improbable that further startling advances will be made particularly in the control of communicable disease. All calculations as to the extent of the need of hospital facilities may be upset. Increased ability in the control of constitutional diseases, and the elimination of chronic cases, coupled with the awakening of the population to the importance of these diseases, may also radically affect any hospital case formula that might be established at the present time.

In establishing a hospital case formula, numerous other difficulties are encountered. Whether or not a given case needs hospital care may depend on many factors—nature of sickness, availability of physician's care or of nursing care, home conditions, the ability of the patient to stand transportation, the distance of transportation, etc. Any hospital case formula which might be established would need to be modified to suit a particular community, and to meet the peculiar conditions that may prevail there. Clearly, communities differ in matters of health as in matters of wealth, and in other things. The most important factors to be considered are the death rate, character of population with respect to wealth, probable increase or decrease in the population of the area to be served, social conditions, percentage of the foreign group, degree of prejudice against hospital service, character of industries and industrial diseases, prevailing types of general diseases, etc.

A reasonable answer to the question of the size of a hospital plant is of importance mainly in two ways. If the plant is too small, the services it can render will not be complete. There are apt to be unnecessary deaths in the community, some unnecessary prolongations of sickness, and some unnecessary temporary or permanent disabilities. If, on the other hand, the plant is built too large, money will have been wasted in its construction, and money will continue to be wasted in its maintenance as long as the building stands.

LOCATION OF HOSPITAL

The problem of location is second only to that of size and arrangement. It is a matter that cannot be lightly disposed of, although abundant instances appear on record in which little thought has been given to it, and in which the whim or prejudice of some local philanthropist has fixed the place to put it. Attention need be given to the location of other hospital facilities and their character, together with the extent to which they draw on local needs; the distribution and shifting of population together with possible increase and decrease; the convenience of the medical profession, and the promptness of medical aid in emergency; current transportation facilities, with forecast of future developments; topography and healthfulness of the region; and proximity of industrial enterprises.

MAINTENANCE

Of equal importance with the mere establishment of a plant is provision for its maintenance; yet it has been the history of small hospitals that adequate provision for maintenance has frequently not been made, with the result that many of them have soon found themselves on the rocks, and have dragged through discouraging years, too weak financially to be properly equipped and maintained, and with too inadequate service to attract the revenues which might keep them on their feet. From what facts are available in the printed records, few hospitals have encountered serious difficulties when proper provision for their maintenance has been made.

RENDERING HOSPITAL SERVICE

Considerable difference of opinion appears to prevail as to the best organization of medical service of the community hospital. There are advocates of the so-called "closed staff" system, under which the hospital medical service is administered by a permanent paid staff which takes care of all patients brought to it. Others favor the "open staff" system, under which any physician of the community may bring his patient to the hospital and continue his care until convalescence or death. There are also modifications of these two systems under which a hospital superintendent, often a surgeon, and occasionally certain assistants, supervise all medical service within the hospital, and strive in varying measure to secure certain standards of service.

According to the history of hospitals thus far established in small communities, the solution of the hospital staff question seems to be one of the most difficult that confront hospital administrators. This arises largely from the fact that the good will and cooperation of the local medical profession is almost a sine qua non for hospital success. If the statements of medical men themselves may be taken at face value, it would seem that nowhere is prejudice, envy and petty policy so rampant as among small town physicians.

PART VI. HOW SOME OF THE INFORMATION NEEDED TO SOLVE THE COMMUNITY HOSPITAL PROBLEM MAY BE SECURED

From what has been said, it would seem that adequate standards on the strength of which hospitals may be established and operated in rural communities are still largely to be created. Various steps suggest themselves by which the fundamental data that are necessary for this purpose may be provided.

1. The experience of existing community hospitals may be studied. This would include a study of the

methods used in establishment and administration, attitude of the public, patronage, and above all a careful investigation into the case history of the hospital through an extended period of time to throw light on the growth and change in the hospital needs of the locality. The International Health Board has on file a fairly complete statement (as of January, 1918) of small hospitals in operation in all parts of the United States, together with a further statement on such hospitals as have been planned, or the establishment of which is being agitated in various communities.

2. In carefully selected communities, experiments might be conducted through the construction of typical community hospitals, coupled with a close study of community health conditions and hospital needs of individual cases of sickness, as well as the numerous other factors concerning which information appears desirable.

3. Community surveys could be made to supply a large basis of statistical fact concerning the extent and character of sickness, with particular reference to its relation to the extent of hospital care needed by the sick. This information could be collected only through personal visits to the homes of the sick and careful investigation of all facts surrounding each case. Such work obviously would need to be in the hands of a competent investigator who was able to secure access to cases of sickness and to receive complete information with regard to them. It is believed that where such a survey is planned, the rural home visiting nurse would deserve close consideration as an effective enumerator. A number of important advantages at once come to mind:

1. The nurse can gather statistical data in the course of her regular duties. Being a by-product of her regular work, the survey would not be expensive. This method would also be a diplomatic way of getting information. The community will not be likely to feel that it is being made the object of "high-brow curiosity," as has so often been the case in the conduct of social investigations. The visit of the nurse will be in the spirit of a service, not of a study.

2. The nurse would also be in a position to follow each case with greater care, and by use of more time than could be devoted to it by a special enumerator whose effort would probably of necessity have to be limited to a single call. Repeated visits would tend to eliminate errors and in other ways increase the accuracy of the record.

3. Where surveys have been attempted it has been found that frequently reluctance is shown in giving information. The nurse, as a welcome attendant of the sick, would be apt to encounter open hearts and minds and complete confidence, such as would not be accorded an enumerator, no matter how tactful, who was unknown to the family approached.

4. Overshadowing in many respects the considerations already set forth is the fact that the actual hospital needs of a community can hardly be accurately determined without first ascertaining what cases of sickness may be properly cared for in the home. Information has already been presented which shows that 65 per cent. of the cases of sickness studied are cared for in homes. The work of the home-visiting nurse will serve to demonstrate what cases at present cared for in homes should be cared for in hospital, and vice versa. Nowhere does it seem to have been found wise to seek to drive a maximum number of cases of sickness into hospitals. Hospital care is always expensive because the plant is expensive and the space is comparatively limited. The home is the logical place for the care of the sick who can be cared for there. It is also the most economical, the most satisfactory, and the sort of care which, other things being equal, gives promise of quickest recovery. The work of an efficient home-visiting nurse will serve to delimit the sphere of home care, on the one hand, and of hospital care, on the other.

5. An exceedingly important by-product in the form of favorable public sentiment is also likely to result when a survey made with a view to the possible establishment of a hospital is conducted by a home-visiting nurse. It seems to be generally conceded that, as an efficient educational force, practical daily demonstrations by a tactful and helpful home-visiting nurse can hardly be excelled. Nothing teaches like demonstration. The nurse will deal with the raw material of the future hospital, and can drive home her arguments with a convincing certainty. A death that might have been avoided, invalidity due to lack of hospital facilities, tardy surgical attendance which prolongs suffering in place of speedy relief—all these things may be used to impress local sentiment deeply.

By the time a survey of this kind has been completed, it would seem that public sentiment would probably be ready to back a hospital of the type required to meet the established needs of the community.

It seems not unlikely that in many communities the diagnostic clinic and laboratory may prove a nucleus from which local hospital facilities will be developed. Such a clinic is likely to develop in physicians the spirit of cooperation, and will bring them together at a central point where, through provision of special facilities, far more accurate diagnoses can be made than are possible under ordinary circumstances. It seems but a step, even though an important one, from such a central clinic to a hospital. The hospital may then house the clinic as well as the patient who needs hospital care in accordance with the diagnosis of the clinic.

Though the hospital occupies an important place in any health program, it may be pointed out that other steps looking to health preservation may well precede it. A hospital established with public funds and maintained by the public results from organized local action. The more efficient the organization of health forces, and the more careful the planning which preceded its establishment, the more secure is the foundation of the hospital likely to be, and the more valuable its services.[11]

A hospital represents a considerable outlay of funds. Numerous important lines of health work, which as life-saving and health-improving factors may outrank hospital service, can be put under way and effectively prosecuted in a community with an expenditure far less than that required for the establishment of a community hospital.

Hospital experience seems to have shown that the full benefits of the service will not be enjoyed by a

11. An interesting statement by Joseph J. Weber, at the time executive secretary, and chairman of the Committee on Hospitals, State Charities Aid Association of New York, which is intended as an argument for the organization of local health forces through the establishment of county health associations prior to the establishment of general county hospitals appeared in *The Survey*, October 16, 1915.

community until sentiment has ripened to an adequate appreciation of exactly what hospital service means. Through the organization of the health forces of a community, by which is meant the formal getting together of those who are appreciative of the public health movement and have come to acquire an interest in matters of personal hygiene, it will be possible to set on foot important constructive measures which are likely to accomplish distinct improvements in health conditions long before the local hospital should appear on the scene. Such movements are always worth encouraging. The personal touch thus given to work, which is likely to be constantly extended, may prove much like the snowball rolling downhill that gains in size and momentum as it courses on its way. In time —in a short time in some communities, and a longer time in others—the occasion may be ripe for the launching of the hospital project with the assurance that the institution is likely to receive the support of the community and to be utilized to its fullest extent. No aspect of the hospital movement seems more unfortunate than that of a community which has burdened itself with a hospital before the bulk of the people have become appreciative of its mission, and which as a result must struggle to get the patronage needed to maintain the institution and to enable it to render the services for which it was established.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

DIPHTHERIA ANTITOXIN, CONCENTRATED (See N. N. R., 1919, p. 265).

The Gilliland Laboratories, Ambler, Pa.

Gilliland's Concentrated and Refined Diphtheria Antitoxin.—Prepared according to Banzhaf's method and preserved with 0.4 per cent. trikresol, contains less than 20 per cent. of solids. Marketed in ampules containing 1,000, 5,000 and 10,000 units each.

TETANUS ANTITOXIN, CONCENTRATED (See N. N. R., 1919, p. 266).

The Gilliland Laboratories, Ambler, Pa.

Gilliland's Concentrated and Refined Tetanus Antitoxin.—Marketed in ampules containing 1,500, 3,000 and 5,000 units each.

ANTIPNEUMOCOCCUS SERUM (See N. N. R., 1919, p. 271).

The Gilliland Laboratories, Ambler, Pa.

Antipneumococcus Serum, Type I.—Marketed in vials containing 100 Cc.; also in double ended vials containing 50 Cc. each, with a gravity injecting apparatus for intravenous injection.

VACCINE VIRUS (See N. N. R., 1919, p. 274).

The Gilliland Laboratories, Ambler, Pa.

Small-Pox Vaccine.—Marketed in sealed capillary tubes, in packages containing two tubes each.

OLD TUBERCULIN (See N. N. R., 1919, p. 277).

The Gilliland Laboratories, Ambler, Pa.

Original Tuberculin, "O. T."—Marketed in 3 Cc. vials.

BARBITAL (See N. N. R., 1919, p. 82).

The following dosage form has been accepted:

Barbital-Abbott Tablets, 5 grains.—Each tablet contains barbital-Abbott 5 grains.

PROCAINE (See N. N. R., 1919, p. 30).

The following dosage forms have been accepted:

Procaine Hypodermic Tablets, ¾ grain.—Each tablet contains procaine-Abbott 0.05 Gm. (¾ grain).

Procaine-Adrenalin Hypodermic Tablets.—Each tablet contains procaine-Abbott 0.02 Gm. (⅓ grain) and adrenalin 0.00002 Gm. (1/2500 grain).

ATREOL.—Ammonium Atreolate.—An aqueous solution containing as its principle constituents the ammonium salts of a mixture of organic acids containing nitrogen in the sulphonic radical which results from the action of sulphuric acid on certain petroleum distillates.

Actions and Uses.—Atreol is a mild antiseptic in solution or in ointment and may even destroy staphylococci with which it is brought in contact. It is applied locally for promoting the absorption of swellings and effusions in contusions following fractures, etc.

It is claimed to be useful in gynecologic and dermatologic practice.

Dosage.—Atreol may be employed in aqueous solution or with ointment bases, with lard, wool fat or petrolatum, or in suppositories with oil of theobroma. Preparations containing up to 50 per cent. may be used.

Manufactured by the Atlantic Refining Co., Philadelphia, Pa. U. S. patent Nos. 1,271,387 (July 2, 1918; expires 1935) and 1,073,548 (Sept. 16, 1913; expires 1930). U. S. trademark applied for.

When crude petroleum from any of the known American fields, except from those of Texas or California, is distilled to coke according to U. S. Patent No. 1,073,548 a "lubricating distillate" is obtained. When this distillate is freed from solid paraffin and from lighter oils, the residue is a form of crude lubricating oil. This is purified by treatment with sulphuric acid with production of two classes of sulphonic acids, one soluble in oil, the other insoluble in oil. The latter class of acids, called crude atreolic acid, is isolated according to U. S. Patent No. 1,271,387. This mixture of acids is purified and converted to ammonium salts. The solution of these ammonium salts in water, to which is added some glycerin, constitutes atreol. The mixture of acids which constitutes the basis of atreol is stated to have the following composition: carbon, 75.25; hydrogen, 7.63; sulphur, 6.20; nitrogen, 1.50; oxygen (by difference), 9.42.

Atreol is a black, syrupy liquid with a bitter, though not nauseating taste. It is completely soluble in water, almost entirely soluble in ethyl alcohol, but insoluble in chloroform. It is miscible with glycerin, lard, wool fat, and petrolatum in all proportions.

The aqueous solution of atreol (1:10) has a faintly acid reaction to blue litmus. The aqueous solution (1:10) yields a greenish black precipitate upon the addition of hydrochloric acid. This precipitate becomes tar-like on heating, and dissolves in water after the removal of any excess of hydrochloric acid and may be precipitated upon further addition of hydrochloric acid. Other acids and salts, e. g., sulphuric acid or aluminum sulphate, also precipitate a resin-like precipitate from the aqueous solution of atreol.

Boil an aqueous solution of atreol (1:10) with sodium hydroxide solution. Ammonia is evolved.

Incinerate 1 Gm. of atreol. Not more than 1 per cent. of residue remains.

Atreol loses not more than 38 per cent. of its weight when dried at 100 C.

Introduce 5 to 8 Gm. (accurately weighed) of atreol into a flask, add 100 Cc. of water and an excess of potassium hydroxide solution. Distill the mixture until no more ammonia passes over, collect the distillate in 20 Cc. of normal sulphuric acid volumetric solution, add two drops of methyl orange test solution and titrate the excess of acid with half-normal potassium hydroxide volumetric solution; the amount of normal sulphuric acid volumetric solution consumed corresponds to from 1.3 to 1.6 per cent. of ammonia (NH_3).

Place 5 to 6 Gm. (accurately weighed) of atreol into a beaker, add 50 Cc. of water and 10 Cc. of a 10 per cent. solution of albumin followed by 5 portions of 5 Cc. each of diluted hydrochloric acid, shaking after each addition. Make up the mixture to a volume of about 350 Cc. and filter through a dry filter. Heat to boiling, add 10 Cc. of a 10 per cent. barium chloride test solution and allow the mixture to stand. Filter off the precipitate of barium sulphate, wash, heat and weigh. The weight of barium sulphate obtained corresponds to less than 0.5 per cent. of ammonium sulphate.

Introduce about 1 Gm. (accurately weighed) of atreol into a Kjeldahl flask, dilute with 30 Cc. of water, add 5 Gm. of potassium chlorate followed by 30 Cc. of nitric acid and evaporate the mixture to about 5 Cc., on a bath of boiling water; add 25 Cc. of hydrochloric acid and evaporate to 5 Cc.; again add 25 Cc. of hydrochloric acid and evaporate to 5 Cc. Then add 100 Cc. of water, heat to boiling and add 10 Cc. of barium chloride test solution; allow the precipitate of barium sulphate to settle; filter, wash, heat and weigh. The weight of the barium sulphate corresponds to from 3.75 to 4.75 per cent. of total sulphur. Calculate the ammonia in the ammonium sulphate, as previously determined in atreol, and subtract the result from total ammonia as previously determined. The remainder represents the ammonia in the organic sulphonic acid group. Multiply this value by 1.88. The result represents the sulphur in the sulphonic group, or the "sulphonic sulphur" and amounts to at least 2.4 per cent. Calculate the sulphur contained in the ammonium sulphate as previously determined in atreol and subtract the result from "total sulphur" as previously determined; from this, subtract the "sulphonic" sulphur. The remainder represents the sulphur present as "organic" ("sulphid") sulphur and amounts to from 1.3 to 2.0 per cent.

Place about 5 to 8 Gm. (accurately weighed) of atreol into a 300 Cc. Kjeldahl flask and repeatedly evaporate to dryness with an excess of potassium hydroxide test solution to remove all combined ammonia. Determine the nitrogen in the residue by the Kjeldahl method. The amount of nitrogen in this residue corresponds to at least 0.75 per cent.

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SATURDAY, MAY 17, 1919

THE THEORIES OF MILK SECRETION

The progress of physiologic chemistry after the middle of the last century contributed indisputable proof of the untenability of the theory of milk secretion which prevailed prior to 1850. At that time it was assumed that the function of the mammary gland, as well as that of other secretory structures, involved essentially a filtering out from the blood of those substances that constitute the respective secretions. For certain components, such as the inorganic salts and water, an explanation of this sort seemed plausible. But as milk contains lactose, a sugar that is not present in the circulating fluid which perfuses the mammary gland, it became evident that the old theory of filtration must be given up.

To account for the appearance of specific products like lactose and casein in milk, when they are found nowhere else in the body, other secretory hypotheses were formulated. According to the oldest of these, the cells of the gland break loose bodily and disintegrate in the alveoli to form the milk solids. A trenchant criticism of this explanation was offered many years ago by the Breslau physiologist Heidenhain.[1] He pointed out that the actual disintegration for the milk produced by some cows in one day would require the replacing of all cells in the udder at least five times a day, a replacement of cells unprecedented in our knowledge of cell division.

Greater plausibility is attached to the theory that associates the activity of the mammary gland with a growth and subsequent detachment of the parts of the cells nearest the alveoli. Loaded with products partly in the form of granules, they are asserted to break away from the basal portions and then disintegrate to produce the milk solids. This conception of the process of the formation of milk has derived its support largely from histologic examinations of the appearance of the gland cells and structures in various stages of the lactation process.

Finally, there is a theory of milk formation which assumes that the cells secrete the materials of which milk is composed without unusual cell destruction. In other words, mammary secretion is analogous to the process for which structures like the salivary or pancreatic glands are responsible.

In an elaborate statistical study of the variation of different components of the milk, notably the fat and the solids not fat, in relation to age in a single breed of cows, Gowen[2] of the Maine Agricultural Experiment Station has disclosed deviations which cannot be reconciled with the cell disintegration hypotheses. Whereas the fat concentration of the milk is maintained throughout life, the proportion of solids not fat, which include sugar, proteins and salts, declines somewhat. Similarly the butter fat constituent increases in the evening milk, whereas the other solids do not share in this proportionate increment. This change of the ratio of fat to solids not fat can scarcely be reconciled with the cell destruction hypotheses; for it is not likely that the cell constitution should change morning and evening in the gland. Such inconsistencies, therefore, support the secretory hypothesis for milk production. Even the theory of a common antecedent for the milk solids can no longer be maintained. As Gowen concludes, the correlation of fat and of solids not fat with amount of milk and age precludes that possibility; for if such a common origin occurred, the fat and the solids not fat would necessarily be correlated to these other variables by comparable amounts. The milk components are not correlated equally with either milk quantity or with age; consequently the hypothesis of a common origin is not tenable. Surprisingly little is known about the process in the case of woman. There is no reason to assume, however, that what occurs in the lactation of cattle differs in its fundamental physiologic principles from the process of milk secretion in the human mammary glands.

1. Heidenhain, R.: Die Milchabsonderung, Hermann, Handbuch der Physiologie, 5: 380, 1883.

NONSPECIFIC PROTEIN THERAPY

The treatment by nonspecific methods in a series of cases of influenzal pneumonia has been the subject of two recent papers.[3] These methods are a development of the work of Ichikawa, Kraus, Lüdke, Jobling and Petersen, and others on the treatment of typhoid fever and of Miller and Lusk's work on arthritis. In the original work in this field it was recognized that there were certain inherent dangers in the method and that wide application would be permissible only with the greatest caution and under careful control.

When vaccines and other toxic protein substances are injected intravenously a train of reactions takes place that includes: (*a*) a primary leukopenia, followed by a leukocytosis; (*b*) a primary lessening of

2. Gowen, J. W.: Variations and Mode of Secretion of Milk Solids, J. Agric. Res. **16**: 79, 1919.

3. Roberts, Dudley, and Cary, Edw. G.: Bacterial Protein Injections in Influenzal Pneumonia, J. A. M. A. **72**: 922 (March 29) 1919. Cowie, D. M., and Beaven, P. W.: Nonspecific Protein Therapy in Influenzal Pneumonia, J. A. M. A. **72**: 1117 (April 19) 1919.

the coagulability of the blood, followed after some interval by a reduction of the coagulation time; (*c*) a pronounced lymphagogue effect, the flow of lymph from the thoracic duct being increased three-fold; (*d*) a hyperistalsis of the intestinal tract, and (*e*) a marked splanchnic engorgement with a resulting lowering of the systemic blood pressure. The alteration of the coagulability of the blood, together with the vascular engorgement of the splanchnic area and the coincident increase in motility of the intestinal tract that follow the therapeutic injection, all tend to increase the possibility of intestinal hemorrhage. Protein therapy is therefore not a safe procedure in this particular disease. That we are able to terminate a certain number of cases of typhoid fever by crisis by means of such injections is of very great interest from a theoretical point of view.

In the treatment of arthritis the results seem much more satisfactory. The work of Miller and Lusk[4] has been confirmed by a number of observers, among them Culver, Cecil, Snyder, Cowie and Calhoun, and there seems little doubt that we may be able to give prompt relief and even permanent freedom from symptoms in a considerable percentage of cases of acute and subacute arthritis, especially those classed as of rheumatic origin—and this with practically no risk to the patient.

As with other new therapeutic measures, there is still some uncertainty as to the proper dosage, which is a matter of considerable importance, in order to arrive at a just estimate of the relative advantage or danger in the treatment. Typhoid vaccines have been extensively used because they are readily procured and give a prompt and sharp reaction. However, they have the disadvantage of inexactitude in the bacterial count, as well as being of varying degrees of toxicity, this latter factor depending not only on the use of different strains of bacteria in their preparation but on the age of the vaccine. Snyder,[5] as well as other workers, is of the opinion that the primary dose should be small—from five to ten million organisms—and that the dose of typhoid bacilli injected should never exceed two hundred and fifty million. While a sharp reaction on the part of the patient is apparently a desideratum, a sufficient response can usually be elicited with a relatively small dose. There is no object in subjecting the patient to the risk of the profound depression that follows occasionally in the wake of large doses. Indeed, the only serious results so far ascribed as due to this form of therapy have followed very large doses or the use of relatively large doses in moribund patients; or such unreasonable procedures as the intravenous injection of milk. It is true that milk injections were recommended by some of the German investigators, but they were always used intramuscularly.

4. Miller, J. L., and Lusk, F. B.: The Treatment of Arthritis by the Intravenous Injection of Foreign Protein, J. A. M. A. **66**: 1756 (June 3) 1916; The Use of Foreign Protein in the Treatment of Arthritis, ibid. **67**: 2010 (Dec. 30) 1916.

5. Snyder, R. G.: A Clinical Report of Nonspecific Protein Therapy in the Treatment of Arthritis, Arch. Int. Med. **22**: 224 (Aug.) 1918.

In the treatment of pneumonia, Roberts and Cary[1] have employed a vaccine made up of 100 million of each of the following organisms per cubic centimeter: influenza bacilli, pneumococci, staphylococci and streptococci. Of this vaccine they injected intravenously first 0.5 c.c., later 1 c.c. In the series of 200 patients so treated there was no evidence of injury to the patients in any way. The mortality in this series was 9.5 per cent.; in a series of eighty-six patients not treated with vaccine the mortality was 31.2 per cent. In the untreated series 20 per cent. recovered by crisis; in the treated, 36 per cent. so recovered. Before any reliance is placed on such statistics they should be analyzed and compared carefully according to age periods as the death rate may vary at different ages. Cowie and Beaven[1] used typhoid vaccine in the treatment of their patients, and they consider the vaccine shock as indicated only in the early stages of pneumonia.

Before applying the treatment to such diseases as pneumonia it would seem that prudence would demand a thorough familiarity with the range of the reaction and the degree of toxicity of the preparation it is intended to use by first employing it in some arthritic cases. In pneumonia we must ever keep before us the vital factor of cardiac impairment and certainly we must not undertake any measure that may depress the function of the heart. In arthritis this danger is largely a negligible one and, with proper precaution, nonspecific therapy is not only without risk but indeed frequently followed by gratifying clinical improvement. Only in the light of experience gained in the manner indicated would it seem permissible for us to attempt to extend this form of therapy to more acute infections.

MALARIA CONTROL IN THE FUTURE

The discovery of the cause and mode of transmission of malaria has paved the way for eradication of the disease. A few years ago the task might have seemed almost hopeless in its magnitude and presumable cost. The experience of Gorgas and his co-workers in the Panama Canal Zone has, however, changed the prospect. It has given a new inspiration to the effort to overcome a menace to personal happiness and community spirit, and to eliminate a source of deterioration of physical and mental vigor. Few organizations or governments could aspire to cope with the malaria problem as efficiently and successfully as is likely to be done by the International Health Board of the Rockefeller Foundation, which has begun a world-wide campaign against hookworm disease.[1] With a view to stimulating more energetic measures against malaria, the board has also interested itself in the problem of malaria control. It is a sign of wisdom that before

1. Report of International Health Board, Social Medicine, Medical Economics and Miscellany, J. A. M. A. **72**: 751 (March 8) 1919.

attempting to put into operation any finished anti-malaria program, this unique organization of specialists has undertaken to test working methods and to evaluate, separately, a number of control measures.

According to the latest report of the Rockefeller Foundation, all of the four measures tested in a preliminary way have exhibited some degree of success. In cooperation with the Mississippi State Department of Health, under the scientific direction of Dr. C. C. Bass of the Tulane University of Louisiana School of Medicine, an experiment was undertaken in 1916 to test the feasibility of controlling malaria in a community by sterilizing the human carriers. A program of this character might be feasible under conditions in which the extermination of mosquitoes is not regarded as practicable. The results of efforts involving more than 25,000 persons does not yet permit a final conclusion; but the indication, according to the report, is that the malaria rate in a given community can be reduced by direct attack on the malaria plasmodia in the blood of the human host.

An effort to control malaria by screening has been made with characteristic thoroughness in a community in Arkansas. A study of the parasite index among the population showed a reduction of 70 per cent. in the prevalence of infection within a year. From a practical standpoint it is helpful to learn that the average cost of screening in this community was less than $15 a house. The per capita cost was estimated at $1.75, thus giving a forceful justification to the slogan: "A yard of screen in the window is better than a yard of crape on the door." In another rural community, where prophylactic quinin was tried as the sole measure of control and was administered to all persons in the community in doses of 5 grains, morning and evening, making 10 grains a day for two successive days each week, there was likewise noteworthy success. A reduction of 60 per cent. in the parasite index was attained in a few months, the per capita cost of the work, omitting the overhead cost, being 57 cents.

Obviously the control of malaria by antimosquito measures should ultimately prove to be the most beneficent mode of attack. Unfortunately the expense involved is not infrequently greater than the communities concerned can be induced to bear. However, the experiments at Crossett and Hamburg, Ark., where the elimination of breeding places of mosquitoes by drainage and other modern antimosquito measures was undertaken, leave no doubt regarding the efficacy of this type of prophylactic work also. The demonstration of the possibility of diminishing the incidence of malaria by more than one method in a given community is a contribution of unusual value to modern preventive medicine. There is promise that where, for example, the cost of mosquito extermination is temporarily prohibitive, other, perhaps less expensive, methods of malaria control can be instituted.

RECENT OBSERVATIONS ON INFLUENZA IN GERMANY

A recent issue of the *Medical Supplement*[1] published monthly by the British War Office since January, 1918, covers the more recent articles on influenza which have appeared in Germany. It may be of interest to give a brief digest of these articles even at second hand. The influenza bacillus has not been found any more frequently than in this country, which confirms the general impression that it is not the primary cause of the disease. Thus Leichentritt[2] found it in the sputum in from 51 to 60 per cent. of influenza cases and in sputum examined for tubercle bacilli primarily, in 24 per cent. Pfeiffer,[3] the original discoverer of this bacillus, found it in the sputum in 51 per cent. of influenza cases examined. Fränkel,[4] Löwenfeld[5] and others appear to have found it in influenza sputum in a considerably larger percentage. After death the bacillus was found scattered throughout the body in eight of eleven cases studied by Fränkel, and Löwenfeld is said to have demonstrated it postmortem in the bronchial pus in 80 per cent. of cases. Pfeiffer found the bacillus also in the internal organs in some cases. Others, like Graetz,[6] were not able to find the bacillus either in the sputum during life or in the bronchi and lungs after death, except just occasionally. It should be remembered that in no case is there any mention of cultures having been made of material obtained from the throat or nasopharynx by means of swabs and that the results just mentioned refer, so far as concerns examinations during life, to cultures or smears of the sputum.

It would be desirable if more attention were given to the material secured by means of swabs because the results may give a better idea of the bacterial flora in the throat than study of the sputum.

Of all the authors whose work is considered, not a single one ventures to claim that the influenza bacillus is the cause of the disease.

Friedberger and Konitzer,[7] after a careful review of all recent German work, conclude that the epidemic was identical with that of 1890-1891; that the cause of influenza remains unknown; that as to the influenza bacillus, some German investigators have found it in a large percentage of cases, others hardly at all, but that since December, 1918, it seems to have been found more frequently while "diplostreptococci" (not described in detail), which were very frequent and were often found even in pure cultures, have become less frequent since last December. Of organisms other than the influenza bacillus, pneumococci, streptococci, and "diplostrepto-

1. Medical Supplement to the Review of the Foreign Press, issued by the General Staff, War Office **2**: 164, 180, 1919.
2. Leichentritt, B.: Deutsch. med. Wchnschr. **44**: 1919, 1918.
3. Pfeiffer, R.: Med. Klin. **15**: 80, 1919.
4. Fränkel, E.: Deutsch. med. Wchnschr. **44**: 1422, 1918.
5. Löwenfeld, D.: Wien. klin. Wchnschr. **31**: 1274, 1918.
6. Graetz: Berl. klin. Wchnschr. **56**: 46, 1919.
7. Friedberger u. Konitzer: Med. Klin. **15**: 108, 1919.

cocci" are mentioned, but it does not appear that any of them have been studied closely. Friedberger and Konitzer made experiments on human beings by spraying, into the throat and nose, filtrates of secretions from the different parts of the respiratory tract in influenza but without any positive result. According to Reuter,[8] the most pronounced changes in acute cases of influenza were in the lower part of the larynx, in the trachea and in the main bronchi, the lining of which was red, swollen and covered with a yellow, gray deposit, underneath which were small hemorrhages. We need further careful observations before we can conclude that such lesions are the primary lesions of influenza, although it is true that the clinical symptoms indicate that such may be the case. He describes the lungs in influenzal bronchopneumonia as simulating the lungs of a hemorrhagic pulmonary edema. In some cases the peribronchial lymph nodes were so swollen that possibly bradycardia might have been caused by pressure on the vagus. This author speaks of the throat as being only slightly red and swollen, and the tonsils as unaffected. From the information furnished by this review it seems safe to conclude that up to the present time, the bacteriologic, anatomic and experimental work on influenza during the recent epidemic in Germany has yielded results of the same general nature as those obtained in this country, and that the primary causative agent of influenza still remains unknown.

THE LENGTH OF LIFE OF RED BLOOD CORPUSCLES

The question as to the usual length of life of the red blood corpuscles has come to have more than mere academic interest. Erythrocytes form an important part of every portion of blood that is transfused from one person to another. Ashby[9] has clearly pointed out that whether transfused blood corpuscles live and function for any considerable length of time or whether the beneficial results that have been observed to follow transfusion, outside the purely mechanical part of increasing the bulk of the depleted blood, are due to a stimulating effect on the hematopoietic function by the product of the broken down corpuscles is still an open question.

When red corpuscles disintegrate, they liberate the pigmentary portion of their constituent hemoglobin. This can be converted into bile by the liver and also excreted as fecal pigments. The fact that these are constantly leaving the body has furnished a reason for the belief that red cells are as constantly being destroyed. Since the number of red cells is ordinarily not decreased, the loss of hemoglobin must be made good by a regeneration of hemoglobin and new corpuscles to contain it. Formerly attempts were made to estimate the extent of destruction of the corpuscles from determinations of the daily excretion of bile pigments. That this plan is untrustworthy has been demonstrated by Hooper and Whipple,[10] according to whom the bile pigments arise, in part at least, from products which the liver has manufactured in excess of its needs for the elaboration of hemoglobin and which, not being needed, are excreted. A still different method of ascertaining how long a corpuscle continues to exist in the circulation consisted in attempting to determine the length of time during which foreign and easily recognized red corpuscles, such as the nucleated erythrocytes of birds, can be recognized in the blood after their injection into the circulation of a mammal. The fallacy of this procedure appeared as soon as modern studies in immunology demonstrated the exceptional instability of foreign cells in the blood serum.

Working at the Mayo Foundation, Ashby seems to have hit on a more promising method. This is based on the observation that it is possible in mixtures of corpuscles of different groups to separate the corpuscles practically quantitatively by treating with a serum that agglutinates the corpuscles of one kind, leaving the others unagglutinated. After a recipient has been transfused with blood of a group other than his own, specimens of his blood treated with a serum that will agglutinate his own corpuscles but not the transfused corpuscles show unagglutinated corpuscles in large numbers. These unagglutinated corpuscles which appear in the recipient's blood after such a transfusion are the transfused corpuscles, and their count is a quantitative indicator of the amount of transfused blood still present in the recipient's circulation.

From counts made on this basis on the blood of persons transfused in the Mayo Clinic, Ashby concludes that the life of the transfused corpuscle extends over thirty days or more. This is a longer lease than was allotted by the earlier estimates obtained by means of the now admittedly invalid assumptions. The conclusions have a practical bearing on transfusion practice. If there is ordinarily no immediate breakdown of the donated corpuscles, the suggestion to push the transfusions until a normal blood cell count is obtained deserves serious consideration. In the absence of disintegration products it becomes more likely that the stimulation of the bone marrow asserted to follow transfusion is the result of improved metabolic condition of bone marrow cells brought about by the increased content of circulating red cells rather than of some stimulatory effect of cellular débris. Or, as Ashby finally concludes, the beneficial results of transfusion may not be due primarily to a stimulating effect on the bone marrow, but more probably to the functioning of the red blood corpuscles.

8. Reuter: Wien. med. Wchnschr. **68**: 2161, 1918.
9. Ashby, Winifred: The Determination of the Length of Life of Transfused Blood Corpuscles in Man, J. Exper. M. **29**: 267, 1919.
10. The Life of the Red Blood Corpuscles and "Bile Circulation," editorial, J. A. M. A. **68**: 1819 (June 16) 1917.

Current Comment

CONTACT INFECTION VERSUS MILK-BORNE INFECTION IN STREPTOCOCCUS SORE THROAT

An interesting report on a hospital epidemic of streptococcus sore throat is that of Keegan which appears in this issue of the JOURNAL.[1] The evidence submitted by the writer indicates quite definitely that the epidemic in question was spread largely by contact in the hospital wards. The author emphasizes strongly the contact nature of the epidemic. Indeed, he goes so far as to express doubt regarding the nature of certain other epidemics of this disease that have been attributed to milk-borne infection. It seems hardly justifiable to regard epidemiologic evidence of this character as necessarily contradictory. If one epidemic is traced to contact, that need not hinder an investigator from accepting evidence that other epidemics are due to other modes of transmission. There is good evidence that diphtheria can be caused by contaminated milk, but such a statement by no means excludes the possibility or probability of diphtheria contact infection. In point of fact the contact epidemic of streptococcus sore throat reported by Keegan is not the first or the only evidence of cases of this sort on record. An extensive contact outbreak of streptococcus sore throat in the state of New York was reported several years ago by Winslow and Hubbard,[2] and recent editions of standard textbooks contain the statement that the disease may be spread both by milk and through contact. There is no escape from the conclusion that the evidence in favor of milk-borne transmission of this disease is quite convincing, not only in some of the instances cited by Keegan but also in a number of other well-studied outbreaks not mentioned in his article. The epidemic at Galesville, Wisconsin, described by Henika and Thompson,[3] gives a particularly clear-cut picture of a milk-borne epidemic. On the whole, although the report of Dr. Keegan's experience adds to our knowledge of the mode of transmission of streptococcus sore throat, his criticism of the epidemiologic reports of others does not seem particularly cogent. This evidence can hardly overthrow well-established facts such as the occurrence of genuine milk-borne epidemics of streptococcus sore throat.

AN AGE OF QUACKERY

A correspondent having called our attention to a freakish article appearing in a magazine of the "health fad" or "physical culture" type, it became necessary to buy a copy of this magazine. So much by way of apology. In clipping the various advertisements from this magazine for the Propaganda files, we discovered in the fifty-seven varieties of fakes, medical, quasi-medical, and otherwise, the dominant note of the magazine's advertisers: Short Cuts! Short cuts to life, liberty and the pursuit of happiness. Short cuts to health, of course, predominate. One learns that he may cure himself of almost anything from soft corns to cirrhosis of the liver by means of the various "internal baths" so plausibly presented by numerous gentlemen who wish to relieve humanity—of surplus cash. You can be made "a 100 per cent. man" by at least six different methods of physical training, each of which is unique and entirely different from its five worthless competitors. Are your eyes weak? There is a short cut cure for them! Are you deaf? There is a short cut to perfect hearing! Are you ruptured? There is a short cut hernia cure. Do you crave large busts? Presto change, you may have them. Every faddist shrewd enough to keep out of the insane asylum seems to be exploiting his particular panacea. One thing must be said for the advertising department of this magazine: it is at least consistent. It does not confine the short cut methods to the relief and cure of human ailments. Any one with a short cut—and the wherewithal to pay for exploiting it—is welcome. One is able, so the advertisers assure us, to "learn shorthand in 7 days;" to "increase your will power in one hour;" to "gain a thorough knowledge of law in your spare time;" to learn in one evening "the secret of being a convincing talker;" to learn to play the piano "in quarter the usual time at quarter the usual cost, and all by correspondence." Verily, we live in an age of quackery. And all the quacks are not in the medical profession, nor are all the nostrums in the "patent medicine" field. Economists tell us that never in the history of the country has there been so much money per capita as today. As a result, there are abroad in the land gentlemen who, figuratively speaking, wish you to invest. After looking through this magazine, it became obvious that the get-rich-quick fraternity does not confine its talents to selling oil stocks, real estate, or "mountain canaries."

THE INCIDENCE OF DISEASE CONTRASTED FOR WHITE AND COLORED TROOPS

Students of eugenics are wont to point out that "certain races of men, without consciousness of their action, have varied in the character of their choices (sex selection) in such a way as to bring about varied conditions in their races, with respect to resistance to disease, to mental capacity, and to moral quality."[1] Of these three factors, the resistance to disease is susceptible of most accurate estimation because it can be considered on the basis of statistical information regarding the morbidity rate in the case of a wide range of disorders. A peculiarly valuable instance is afforded by the comparison of white men and negroes in the United States Army. The numbers are sufficiently large to give some semblance of validity to the deductions which they permit. The white and colored troops live under equally good sanitary conditions and are examined with equal diagnostic skill. A study of the

1. Keegan, J. J.: A Hospital Epidemic of Streptococcus Sore Throat with Surgical Complications, this issue, p. 1434.
2. Winslow, C. E. A., and Hubbard, L. W.: Month. Bull., New York State Department of Health, September, 1915.
3. Henika, G. W., and Thompson, I. F.: Septic Sore Throat, J. A. M. A. **68**: 1307 (May 5) 1917.

1. Fisher, Irving, and Fisk, E. L.: How to Live, New York, 1915, p. 323.

sort indicated has recently been reported by Lieutenant-Colonel Love and Major Davenport,[2] who have undertaken an analysis of more than half a million admissions to sick report in our army, including more than 15,000 for the colored troops. For many maladies the morbidity rate is the same in the two races. The army officers have, however, ascertained from the statistics that the colored troops are relatively less resistant to diseases of the lungs and pleura as well as to certain general diseases, like tuberculosis and smallpox; they are also much more frequently infected with venereal diseases, and suffer widespread complications of these diseases. Love and Davenport point out, on the other hand, that in general the skin, not only on the surface of the body but also that which is infolded to form the lining of the mouth and nasopharynx, is much more resistant to micro-organisms in negroes than in white men. The white skin seems to be relatively a degenerate skin in this respect. Furthermore, the nervous systems of the uninfected negroes show fewer cases of "instability" than those of white men. Thus there is far less neurasthenia, there are fewer instances of psychopathic states, and there is only half as much alcoholism in colored as in white troops. Nutritional disorders, such as diabetes, urinary calculi, and inflammations of the gallbladder, are also less common among the negroes. As Love and Davenport describe the uninfected negro, "he seems to have more stable nerves, has better eyes, and metabolizes better. Thus, in many respects the uninfected colored troops show themselves to be constitutionally better physiological machines than the white men."

THE MATERIALITY OF GERMS AND AUTOMOBILES

A recent issue of a Newark, N. J., paper reports the death of a 9 year old girl, the daughter of "Christian Scientists," who succumbed to diphtheria under "Christian Science" treatment. According to this report, the parents of the child asked her when she became ill whether she desired a doctor or wished to have "Christian Science" treatment, "and the little girl chose the latter because it was her belief." Presumably the answer to this tragedy on the part of the "Christian Scientists" generally, will be that children also die of diphtheria under medical treatment. This is the stock argument whenever a member of this cult "passes on." The point is not well taken. If this same little girl had been pinned under an overturned automobile, even her parents would not have urged their particular form of treatment to the exclusion of first removing the car from the child. It is true that prying up the car and taking the girl from under might not have saved her life; but in the present state of our knowledge, this would be the first and obvious thing to do. It is equally true that giving the child antitoxin might not have saved her life, but this, too, in the present state of our knowledge, should have been the first and obvious thing to do. Matter may be merely an error of mortal mind, but when it is ponderous enough, even "Christian Scientists" are forced to take cognizance of it, and to use material methods in dealing with it. Although the followers of Mrs. Eddy may not believe it, the Klebs-Loeffler bacillus is a material object, and while not so obvious as a brick, it is, in its own peculiar field, just as pregnant with danger to that other error of mortal mind we call the material body.

2. Love, A. C., and Davenport, C. B.: A Comparison of White and Colored Troops in Respect to Incidence of Disease, Proc. Nat. Acad. Sc. 5: 58, 1919.

Association News

THE VICTORY MEETING

Subcommittee on Hotels of the Local Committee on Arrangements Assures Ample Hotel Accommodations

The chairman of the subcommittee on hotels for the Atlantic City session reports that at the present time the St. Charles, Haddon Hall, Chalfonte, Traymore, Brighton, Marlborough-Blenheim, Dennis, Shelburne and Chelsea are booked to their capacity for the week of the VICTORY MEETING—the annual session of the American Medical Association. The managements of these hotels have informed the committee that they will make reservations at a later date provided they are in position to do so. The other beach front hotels (THE JOURNAL, May 10, 1919, page 1410) are still in position to make reservations.

This announcement does not mean that there will be difficulty in caring for all who attend the Victory Meeting. Atlantic City is a city of hotels, and the large number of excellently equipped hotels on the side avenues will provide ample accommodations. All communications concerning hotels should be addressed to the Chairman of the Hotel Committee, Dr. David B. Allman, 1801 Pacific Avenue, Atlantic City, N. J.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending May 9, there were 17,560 officers in the Medical Corps, a decrease of 553 from the previous week. The Medical Reserve Corps contained 1,870 officers. The total number of medical officers discharged since the beginning of the war is 15,996.

Army Transfers Hospitals to Public Health Service

The hospitals at Camp Beauregard, La.; Camp Cody, N. M.; Camp Fremont, Calif.; Camp Hancock, Ga.; Camp J. E. Johnston, Fla.; Camp Logan, Tex.; Camp Sevier, S. C.; Camp Sheridan, Ala.; Dansville (N. Y.) General Hospital 13, and Nitrate Plant, Perryville, Md., with their equipment, buildings and land have been transferred by the War Department to the Treasury Department for the use of the Public Health Service in accordance with Act 326 of March 3.

Awards and Decorations

JOHN S. BLACKMAR, Capt., M. C., U. S. Army, Norwich, Conn., on duty with the 372d Infantry, was awarded the Croix de Guerre.

"He distinguished himself especially during the period of September 27 to October 6, 1918, when he showed the greatest zeal in the accomplishment of his duty, working day and night, under violent bombardment, and took care of over 400 wounded, many of whom were in a condition requiring the most difficult operations."

WILLIAM C. WATKINS, Major, M. C., U. S. Army, Oconto, Wis., awarded the Croix de Guerre, April 25.

FRANK H. MCGREGOR, Lieut., M. C., U. S. Army, Mangum, Okla., has been given the military war cross by King George V of England.

Isaiah Sicotte, Capt., M. C., U. S. Army, National Mine, Mich., has been awarded the Croix de Guerre.

"On the evening of 1st of November, 1918, near Mullen, Belgium, during a terrific enemy artillery bombardment, Lieutenant I. Sicotte, Medical Department 147th Infantry, fearlessly volunteered in the digging out and saving of seventeen men who had been buried in a farm house which was struck during this bombardment. The artillery action was such that the use of any number of men for this duty was absolutely impossible. By his wonderful service and devotion Lieutenant Sicotte dug these men out of the ruins and later rendered exceptional medical service.

Slightly Wounded

In a deferred report published in the *U. S. Bulletin* of May 1, it is reported that Marshall A. Welbourn, Capt., M. C., U. S. Army, Union City, Ind., has been slightly wounded.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

Note.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

ALABAMA

Anniston—Whiteside, J. M. (C.)
Bessemer—Blue, J. H. (C.)
Birmingham—Brown, E. T. (L.)
Magruder, T. V. (C.)
Perdue Hill—Gailard, S. S. (L.)
Talladega—Jones, E. H. (C.)

ARIZONA

Phoenix—Thomas, R. E. (C.)
Prescott—Yount, C. E. (L. C.)

ARKANSAS

Dumas—Isom, A. (C.)
Hot Springs—Smith, W. K. (C.)
Little Rock—Henry, H. B. (L.)
Mumey, N. (L.)
Relfs Bluffs—Wilson, J. S. (L.)

CALIFORNIA

Fresno—Staniford, K. J. (M.)
Long Beach—Hill, W. B. (L.)
Los Angeles—Granger, A. S. (C.)
Morrison, W. A. (M.)
Scholz, A. M. (L.)
Oakland—Rea, T. (C.)
Sacramento—Snyder, J. R. (L.)
San Francisco — Gibbons, M. R. (M.)
Kilgore, E. S. (L. C.)
McChesney, G. J. (M.)
South Pasadena — Sherry, L. B. (C.)
Stockton—Powell, D. R. (L.)
Woodland—Joyce, W. A. (L.)

COLORADO

Colorado Springs—Knowles, T. R. (L.)
Denver—Hillkowitz, P. (C.)
Paine, R. A. (L.)
Greeley—Woodcock, B. (C.)

CONNECTICUT

Middletown—Harvey, C. C. (C.)
Naugatuck—Bull, D. C. (C.)
Torrington—Wadhams, R. P. (L. C.)

DISTRICT OF COLUMBIA

Washington—Rosenberg, L. C. (L.)
Zinkhan A. M. (C.)

FLORIDA

Fort White—Whitlock, W. E. (C.)
Gainesville—Graham, A. (C.)
Roxborough, W. F. (L.)
McDavid—Busey, T. J. (L.)
Reddick—Ferguson, R. D. (L.)

GEORGIA

Atlanta—Cowan, Z. S. (M.)
Carrollton—Brock, S. (M.)
Columbus—Odom, J. D. (L.)
Dawson—Lamar, L. (L.)
Dublin—Hodges, C. A. (C.)
Morgan—Hendry, J. H. (L.)
Savannah—Dancy, W. R. (C.)
West Point—DeLamar, J. D. (L.)

IDAHO

Boise—Maxey, E. E. (M.)
Payette—Crouch, J. E. (C.)
Preston—Bland C. (M.)

ILLINOIS

Alto Pass—Hale, J. A. (C.)
Blue Mound—Montgomery, C. L. (C.)
Chicago—Chaffin, C. P. (C.)
Donnelly, O. A. R. (C.)
Frost, J. G. (C.)
George, R. H. (C.)
Hurlbut, S. R. (C.)
Lovewell, C. H. (M.)
McCarthy, R. R. (C.)
Mosher, G. W. (C.)
Paskind, J. (L.)
Read, W. R. (L.)
Wood, F. M. (C.)
Decatur—Morris, R. L. (M.)
Smith, F. E. (L.)
East Moline—Neil, T. F. (L. C.)
Martinton—Herdien, E. F. (C.)
Melrose Park—Shockey, G. C. (C.)
Peoria—Levitin, E. Z. (C.)
Sullivan—Davidson, W. P. (L.)

INDIANA

Bicknell—Reese, F. L. (C.)
East Haven—Green, L. M. (C.)
Evansville—Wier, J. E. (L.)
Geetingsville—Robison, J. E. (C.)
Indianapolis—George, W. E. (C.)
Sweet, R. L. (L.)
Linnsburg—Riley, F. H. (L.)
Mace—Williams, H. B. (M.)
Terre Haute—Hauck, J. H. (L.)
Warren—Black, C. S. (L.)

IOWA

Council Bluffs — Bellinger, F. E. (M.)
Moth, R. S. (C.)
Perry—McPherrin, H. I. (C.)
Webster City — Crumpton, R. C. (C.)

KANSAS

Clay Center—Morgan, E. C. (C.)
Grenola—Mason, B. B. (L.)
McPherson—Engberg, A. (C.)
Mound Valley — Bennett, R. M. (C.)
Neodesha—Williams, A. P. (L.)
Shawnee—Quiring, W. O. (L.)
Topeka—Hershey, C. M. (C.)
Wellington—Zink, C. M. (L.)
Wichita—Burton, W. G. G. (L.)
Doherty, W. T. (L.)

KENTUCKY

Bowling Green—Buford, C. C. (L.)
Central City—Foley, F. K. (C.)
Lancaster—Gilbert, J. S. (L.)
Lexington—Barrow, D. (L. C.)
McClymonds, J. T. (L. C.)
McGinnis, J. S. (L.)
Scott, J. W. (C.)
Smith, O. L. (C.)
Wilson, G. H. (L.)
Louisville—Arnold, C. G. (L.)
Grigsby, G. F. (C.)
Haessler, F. H. (L.)
Hanes, G. S. (M.)
Moren, J. J. (M.)
Pirkey, M. E. (C.)
Newport—Berry, S. (M.)
Williamsburg—Smith, L. O. (L.)
Winchester—McKinley, D. H. (C.)

LOUISIANA

Bozzier—Whittington, A. C. (L.)
Monroe—McHenry, A. G. (C.)
New Orleans—Eidson, W. R. (L.)
St. Martinville — Fleming, P. H. (L.)
Welsh—Stewart, W. L. (L.)
Zona—Jones, H. V. (C.)

MAINE

Bangor—Carter, L. F. (L.)
Taylor, C. J. (L.)
Whitney, W. E. (C.)

MARYLAND

Baltimore—Botbyl, B. W. (L.)
Brent, H. W. (C.)
Denny, W. L. (L.)
More, J. E. (C.)
Hagerstown—Fleming, P. N. (L.)

MASSACHUSETTS

Boston—Brearton, E. J. (L.)
Fennessay, J. F. (C.)
Hoffman, M. (L.)
Norbury, F. G. (C.)
Reed, C. (C.)
Brookline—Fallon, J. F. (L.)
Cambridge—Andrews, R. E. (L.)
Leith, R. B. (C.)
East Long Meadow—Light, E. E. (L.)
Fall River—Stansfield, C. W. (L.)
Lowell—Livingston, C. B. (L.)
Quincy—Diehl, H. E. (L.)
Worcester—Hunt, E. L. (C.)
Woburn—Lane, C. G. (C.)

MICHIGAN

Ann Arbor—Sage, H. M. (L.)
Columet—Lisa, J. R. (C.)
Cassopolis—Harmon, C. M. (L.)
Detroit—Ballin, M. (M.)
Diebel, W. H. (C.)
McCord, C. P. (M.)
Mills, E. P. (C.)
Nuemann, A. J. (L.)
Shawan, H. K. (C.)
Manistee—Gunderson, E. A. (L.)
Snover—Angle, H. H. (C.)
Vernontville—McLaughlin, C. L. D. (L.)

MINNESOTA

Austin—Leck, C. C. (C.)
Cottonwood—Tharaldsen, T. (C.)
Duluth—Clark, C. H. (M.)
Eklund, W. J. (L.)
Hinckley—Kelsey, C. G. (C.)
Minneapolis—Cranmer, R. R. (L.)
Nevis—McCann, G. E. (L.)
St. Charles—Rollins, F. H. (C.)
St. Paul—Burns, F. W. (C.)
Colvin, A. R. (M.)
Jones, E. M. (M.)
Lewis, W. W. (C.)
Virginia—McDonald, C. A. (L.)
Wadena—Kenyon, P. E. (C.)
Winona—Lynch, G. V. (L.)

MISSISSIPPI

Laurel—Brown, H. L. (C.)
Richton—Walley, D. W. (L. C.)
South Haven—Wiley, H. W. (L.)
Variden—Alexander, C. D. (C.)
Vicksburg—Edwards, C. J. (L.)
Going, R. (L.)

MISSOURI

Hannibal—Waldo, E. E. (L.)
Jefferson Barracks — McBeath, N. E. (C.)
Kansas City—Gerstenkorn, R. E. (L.)
Lux, P. (L.)
Platte, R. B. (L.)
Whittaker, J. H. (L.)
Lancaster—Potter, W. A. (C.)
Lithium—Graff, J. H. (C.)
Odessa—Allen, C. H. (L.)
Reeds—Bragdon, G. H. (C.)
Springfield—Atherton, J. L. (L.)
St. Joseph—Kessler, E. B. (L.)
St. Louis—Bremser, H. L. (C.)

MONTANA

Helena—Cole, P. G. (C.)

NEBRASKA

Fairbury—Powell, M. J. (L.)
Omaha—Brown, A. C. (L.)
Johnson, A. A. (M.)

NEVADA

Ely—Alexander, I. (L.)

NEW HAMPSHIRE

Lancaster—Smith, H. B. (L. C.)

NEW JERSEY

Cape May—Marcy, V. M. D. (L.)
East Orange—Whitman, L. B. (L.)
Fredonia—Wheelock, H. E. (L.)
Laurenceville—Fee, E. K. (C.)
Newark—Markens, E. W. (C.)
McCabe, T. S. (C.)
Rottenberg, S. (L.)
Paterson—Golding, H. N. (L.)
Whippany — McCormack, W. G. (L.)

NEW YORK

Albany—Hacker, P. C. (C.)
Tebbutt, H. K., Jr. (C.)
Albion—Brodie, R. E. (M.)
Binghamton—Allerton, S. M. (C.)
Bagley, C. T. (L.)
Johnston, H. L. (L.)
Sears, F. W. (M.)
Blackwell's Island—Roane, S. C. (C.)
Brooklyn—Bergamini, H. M. (C.)
Berlin, L. (C.)
Costigan, L. H. (C.)
Danish, H. (L.)
Gold, L. (L.)
Goldstein, E. (L. C.)
Madden, J. J. (L.)
Nicol, C. F. (C.)
Pilcher, J. T. (M.)
Ward, J. F. (C.)
Buffalo—Grabau, J. C. (C.)
Gram, I. F. (C.)
Hall, G. M. (C.)
Delhi—Silliman, G. A. (L.)
Elmhurst—McCann, T. P. (L.)
Enfield Center—Robb, D. (C.)
Friendship—Johnson, H. M. (L.)
Geneseo—Newton, C. I. (M.)
Guilford—Buell, B. A. (L.)
Hempstead—Russell, H. C. (C.)
Storms, H. A. (L.)
Hoosick Falls—Nealon, W. F. (C.)
Hornell—Kelly, J. R. (C.)
Taylor, G. E. (C.)
Ilion—Jones, L. P. (L.)
Ithaca—Mumford, S. A. (C.)
Tinker, M. B. (M.)
Jamestown—Hayes, F. W. (C.)
Manlius—Ballantyne, R. M. (C.)
Middletown—Donovan, J. C. (C.)
Storms, M. A. (M.)
Mount Vernon—Kayser, C. D. (C.)
Sinnott, J. J. (C.)
New York—Atkins, L. R. (C.)
Auslander, M. (L.)
Bles, C. D. (C.)
Bookman, A. (C.)
Chaplin, H. (C.)
Corbett, S. F. (L. C.)
Coughlan, J. F. (C.)
Fitzgerald, A. J. C. (C.)
Goodman, C. (M.)
Gray, C. P. (C.)
Gross, H. (L.)
Hughes, J. C. (L.)
Jimenis, A. O. (C.)
Lancer, T. F. (M.)
Lebelson, I. (C.)
Meader, J. S. (C.)
Mason, F. J. (C.)
McFarland, W. L. (C.)
Morgan, W. A. (C.)
Phillips, B. G. (M.)
Reardon, W. I. (C.)
Reed, L. V. (L.)
Smith, M. D. (C.)
Smith, M. K. (C.)
Young, C. H. (L. C.)
Niagara Falls—Miller, G. L. (C.)
Ogdensburg—Meehan, J. E. (C.)
Worthing, H. J. (C.)
Oneonta—Augustin, G. W. (M.)
Potsdam—Reynolds, R. J. (C.)
Richmond Hill — McGraw, R. J. (C.)
Rochester—Cassebeer, A. F. (C.)
Henry, J. P. (C.)
Rome—Grogan, W. L. (L.)
Schenectady—Early, J. (L.)
Schuylerville—Cleaver, R. S. (C.)
Southampton — Wheelright, J. S. (M.)
St. Johnsville—Beebe, G. W. (C.)
Syracuse—Hadley, L. A. (L.)
Parsons, J. (C.)
Truex, W. E. (C.)
Utica—Johns, M. W. (C.)
Mahady, S. A. (C.)
Westfield—Foster, R. W. (L.)
Yonkers—Benedict, A. N. (C.)

NORTH CAROLINA

Albemarle—Anderson, J. N. (L.)
Asheville—Dunn, W. L. (L. C.)
Cerro Gordo—Floyd, L. D. (C.)
Henderson—Tinsley, T. C. (L.)
Kinston—Peery, V. P. (L.)
Louisburg—Newell, H. A. (M.)
Morgantown—Vernon, J. W. (M.)
New-Bern—Pollock, R. A. (C.)
Rockwell—Choate, G. W. (C.)
Wadesboro—Covington, J. M. (C.)
Wilmington—Pridgen, C. L. (M.)

NORTH DAKOTA

Edgeley—Greene, L. B. (C.)
Hazen—Eastman, L. G. (C.)

OHIO

Akron—Heckert, H. R. (C.)
Bluffton—Soash, M. D. (L.)
Bremer—Brown, C. W. (C.)
Burton—Myler, T. F. (C.)

Cincinnati—Hatfield, W. H. (L.)
Cleveland—Bunts, F. E. (L. C.)
Colvin, B. B. (C.)
Pearce, R. G. (M.)
Spurney, A. B. (C.)
Columbus—Postle, C. D. (C.)
Dayton—Coleman, C. A. (C.)
Mansur, W. B. (C.)
Evansport—Kittredge, M. R. (L.)
Kinsman—Moore, L. G., Jr. (C.)
Marion—Smith, C. G. (L.)
St. Bernard—Wayble, H. C. (L.)
Toledo—Ficklin, F. B. (C.)
Meader, H. B. (C.)
Rosenblum, H. G. (L.)
Zanesville—Walters, A. E. (C.)

OKLAHOMA

Fairfax—Bagby, E. L. (C.)
Okmulgee—Ming, C. M. (L.)

OREGON

New Pine Creek — Garner, J. L. (L.)
Portland—Brooke, L. W. (C.)

PENNSYLVANIA

Ardmore—Klein, T. (C.)
Doylestown — Swartzlander, J. R. (L.)
Easton—Detwiller, A. K. (M.)
Ellwood City — Schaffner, B. W. (L.)
Franklin—Thompson, A. C. (C.)
Hillsgrove—Mosher, J. S. (C.)
Johnstown—Stewart, H. M. (C.)
McKeesport — Ungerman, F. G. (L.)
Meadville—Clawson, F. A. (L.)
Philadelphia—Boston, F. E. (C.)
Keating, H. F. (C.)
Leopold, S. S. (L.)
Marks, J. K. (L.)
Newcomet, W. S. (M.)
Newlin, A. (M.)
Saul, C. D. (C.)
Segal, M. (L.)
Shannon, C. E. G. (C.)
Singer, S. (L.)
Williams, C. S. (M.)
Pittsburgh—Dearth, W. A. (L. C.)
Edmundson, T. P. (C.)
Ferner, J. J. (L.)
Scranton—Wainwright, J. M. (L. C.)
St. Mary's—Black, W. M. (L.)
Wilkes Barre — Sweeney, E. A. (C.)
Wyomissing—Lerch, C. E. (L.)

RHODE ISLAND

Woonsocket—Baxter, T. F. (C.)

SOUTH CAROLINA

Greenwood—Simmons, J. F. (L.)
Pelzer—Marton, W. T. (L.)

SOUTH DAKOTA

Lake Andes—Langley, C. S. (C.)

TENNESSEE

Aspen Hill—Herbert, R. N. (C.)
Cardiff—Wilson, G. E. (L.)
Centerville—Beasley, J. S. (L.)
Covington—Sale, W. W. (L.)
Fayetteville—Davis, M. B. (L.)
Knoxville—Acuff, H. (M.)
Lucy—Blackshore, W. M. (L.)
Maryville—Carson, J. E. (L.)
Memphis—Summers, C. K. (C.)
Taylor, J. Q. (C.)
Nashville—Barr, R. A. (L. C.)
Dixon, W. C. (M.)
Jones, R. L. (C.)
Kennon, W. G. (C.)
Leach, J. L. (L.)
McCabe, W. M. (M.)
Smith, L. (M.)
Tigert, H. M. (M.)
Newport—McGaha, W. E. (L.)
Woods, J. O. (C.)

TEXAS

Aransas Pass—Noble, W. (L.)
Bartlett—Sutton, R. S. (C.)
Boerne—Noot, J. F. (C.)
Bryans Mill—Kidwell, W. C. (L.)
Clayton—Adams, J. E. (C.)
Clifton—Carpenter, J. O. (L.)
Dallas—Davis, J. S. (C.)
Davilla—Macune, J. W. (L.)
Denton—Breiland, W. (C.)
Galveston—Heard, A. G. (C.)
Reading, W. B. (C.)
Kingsbury—La Forge, H. (L.)
Lane—Cravens, W. E. (C.)
Lockhart—Schwarz, E. G. (C.)
Madisonville—Connor, P. J. (C.)
McKinney—Largent, B. F. (C.)
Meridian—McDonald, J. F. (C.)
Paducah—Stone, F. E. (L.)
Shiner—Schulze, E. C. (L.)
Sweetwater—Dudgeon, L. O. (C.)
Thurber—Shackelford, J. A. (C.)

VIRGINIA

Galax—Davis, W. P. (L.)
Lynchburg—Rosenthal, S. H. (L.)
Norfolk—Noell, R. H. (L.)
Renn, G. A. (L. C.)
Williamson, T. V. (C.)
Pungoteague—Hiden, I. H. (C.)
Richmond—Craig, W. H. (L.)
Rudasill, C. L. (L.)
Shelton, T. S. (L.)
Sutherlin—Bailey, C. L. (L.)

WASHINGTON

Aberdeen—Austin, O. R. (M.)
Port Blakeley—Kellam, C. C. (C.)
Seattle—Baldwin, L. B. (C.)

WEST VIRGINIA

Moundsville—Ealy, D. B. (C.)
Omar—Rowan, W. S. (C.)
Tamroy—Seebert, J. E. (L.)
Wheeling—Drinkard, R. U. (L.)

WISCONSIN

Boyceville—Oliver, C. H. (L.)
Chippewa Falls—Wilkowske, C. W. (C.)
Franksville—Roth, W. C. (L.)
St. Croix Falls—Caldwell, H. C. (C.)
Waukesha—Davies, R. E. (C.)

WYOMING

Buffalo—Hynds, J. (S.)
Sunrise—Lowe, W. (L.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CONNECTICUT

Bridgeport—Lambert, H. B.

DELAWARE

Wilmington—Cleaver, H. A.

DISTRICT OF COLUMBIA

Washington—Anderson, F.

ILLINOIS

Chicago—Anderson, T. O.
Tumpowsky, I. H.

MINNESOTA

Minneapolis—Henry, C. E.
Owatonna—Smersh, J. F.

MISSOURI

St. Louis—North, E. P.

NEW YORK

New York—Mulholland, J. A.
Riegel, J. A.
Stalfa, A. W.
White Plains—Hammond, R. B.

NORTH CAROLINA

Lawinburg—James, A. W.

OHIO

Cleveland—Biddinger, A. E.

PENNSYLVANIA

Manheim—Martin, D. W.
Philadelphia—Thompson, R. H.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Arkansas

To Fort McPherson, Ga., from Camp Lee, Lieut. E. B. BUCHANAN, Texarkana.

California

To Camp Dix, N. J., from Tobyhanna, Pa., Capt. C. B. ADAMS, Los Angeles.

To report to the commanding general, Western Department, from Fort D. A. Russell, Major J. E. McKILLOP, Huntington Beach; Lieut. R. S. CARTER, San Diego.

Colorado

To Walter Reed General Hospital, D. C., for instruction, and on completion to his proper station, from Fort Ontario, Capt. E. D. BURKHARD, Delague.

To Washington, D. C., from San Diego, Capt. F. L. DENNIS, Colorado Springs.

Connecticut

To Boston, Mass., from Camp Dix, Capt. E. F. McGOVERN, Bridgeport.

To Camp Zachary Taylor, Ky., base hospital, from Camp Dix, Lieut. J. H. T. SWEET, Jr., Hartford.

To Fort McPherson, Ga., from Camp Jackson, Capt. W. F. COLLINS, New Haven.

District of Columbia

To Army Medical School for instruction, from Camp Devens, Lieut. I. C. RIGGIN, Washington.

Georgia

To Camp Benning, Ga., from Camp Jackson, Capt. W. R. McCOY, Danielsville.

Illinois

To Camp Grant, Ill., base hospital, from Fort Riley, Capt. H. H. SHEETS, Oregon.

To Fort Dupont, Del., from Edgewood, Md., Capt. J. M. HUBER, Chicago.

To Fort McHenry, Md., from Camp Dix, Lieut. I. H. CUTLER, Chicago.

To Fort Sheridan, Ill., from Camp Dix, Capts. E. A. CHRISTOFFERSON, H. C. SCHUMM, Lieut. E. HANS, Chicago.

To Philadelphia, Pa., from Camp Dix, Capt. W. C. SWEET, Chicago.

Indiana

To Camp Dodge, Iowa, from New Cumberland, Pa., Lieut. S. M. COMPTON, Forest.

To Camp Jackson, S. C., base hospital, from Camp Sevier, Capt. O. E. FINK, Terre Haute.

To Fort Leavenworth, Kan., from Fort Benjamin Harrison, Lieut. E. B. M. CASEY, Attica.

To Fort Sheridan, Ill., from Camp Dix, Lieut. R. A. GILMORE, Michigan City.

The following orders have been revoked: *To Denver, Colo.*, from Camp Dix, Lieut. R. W. REID, Union City. *To Fort Riley*, from Camp Shelby, Capt. H. M. SHULTZ, Logansport.

Iowa

To Camp Dodge, Iowa, base hospital, from Camp Dix, Lieut. R. R. KULP, Davenport.

To Waco, Tex., Rich Field, from Fort Sill, Lieut. J. T. McBRIDE, Des Moines.

Kansas

To Fort Riley, base hospital, from Chicago, Lieut. C. H. SMITH, Pittsburg; from Fort Snelling, Capt. S. M. MYERS, Potter.

Kentucky

To Cape May, N. J., for instruction in the diagnosis and treatment of peripheral nerve injury cases, from Fort Thomas, Lieut.-Col. J. T. AYDELOTTE.

To Detroit, Mich., from Camp Dix, Lieut. H. L. PELLE, Louisville; from Charleston, Lieut. C. E. VIDT, Russell.

To Fort McPherson, Ga., from Camp Sevier, Lieut. J. T. MALONE, Jr., Louisville.

To Fort Riley, from Camp Zachary Taylor, Capt. F. M. WALKER, Louisville.

To Hoboken, N. J., from New Cumberland, Pa., Lieut. O. F. HUME, Pikeville.

To Philadelphia, Pa., from Camp Dix, Capt. L. W. FRANK, Louisville.

Louisiana

To Walter Reed General Hospital, D. C., from Fort McPherson, Lieut. R. S. KEMP, New Orleans.

Maryland

To Camp A. A. Humphreys, Va., camp hospital, from Edgewood, Lieut. J. F. LUTZ, Baltimore.

To Fort McHenry, Md., from Camp Dix, Lieut. C. C. KELLY, Baltimore; from Garden City, Lieut. V. L. MAHONEY, Catonsville.

To Spartanburg, S. C., from Camp Travis, Capt. I. I. HIRSCHMAN, Baltimore.

To Walter Reed General Hospital, D. C., from Camp Dix, Lieut. I. ZADEK, Baltimore; from Roland Park, Capt. I. K. LOVETT. For instruction, and on completion *to his proper station*, from Camp Meade, Lieut. G. R. MICKLETHWAITE, Baltimore.

Massachusetts

To Army Medical School for instruction, from Camp Grant, Lieut. J. H. MURPHY, Dorchester.

To Boston, Mass., from Baltimore, Capt. J. B. AYER, Boston.

To Camp Devens, Mass., base hospital, from Plattsburg Barracks, Capt. E. S. JOHNSON, New Bedford.

To Fort Benjamin Harrison, from Camp Dix, Lieut. W. A. JILLSON, Westborough.

Michigan

To Camp Custer, Mich., from Long Island, Lieut. W. A. HYLAND, Grand Rapids.

To Chicago, Ill., from North Charleston, Capt. E. SMITH, Jr., Detroit.

To Detroit, Mich., from Camp Dix, Capt. T. B. MARSDEN, Detroit.

To Fort Riley, base hospital, from Camp Dix, Capt. C. G. WENCKE, Battle Creek.

To Walter Reed General Hospital, D. C., for instruction, and on completion to his proper station, from Detroit, Capt. T. S. MEBANE.

Minnesota

To Dover, N. J., from Camp Jackson, Capt. FAVOUR, Jr., Red Lake.

To Fort Moultrie, N. C., from Fort Oglethorpe, Capt. E. SCHONS, St. Paul.

To Fort Riley, from Camp Zachary Taylor, Lieut. F. W. WHITMORE, St. Paul.

The following order has been revoked: *To Fort Snelling, Minn.*, from Camp Dodge, Capt. F. M. MANSON, Worthington.

Missouri

To Biltmore, N. C., from Camp Upton, Capt. J. R. GREEN, Independence.

To Fort Benjamin Harrison, from Camp Dix, Capt. H. UNTERBERG, St. Louis.

To Fort Riley, from Plattsburg Barracks, Capt. H. M. LARUE, Kansas City.

To Fort Sheridan, Ill., from Camp Dix, Lieut. J. C. ROTTER, St. Louis.

To Mineola, N. Y., Hazelhurst Field, from Waco, Tex., Capt. D. APPLEBERRY, Belleview.

The following order has been revoked: *To Fort McPherson, Ga.*, from Fort Sill, Capt. T. J. LYNCH, St. Joseph.

Nebraska

To Fort Des Moines, Iowa, from Camp Dix, Major J. M. HENCH, Omaha.

To Muscle Shoals, Ala., from Camp Boyd, Lieut. C. W. PARKS, Lincoln.

New Hampshire

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station*, from Williamsbridge, Major J. J. POWERS, Manchester.

New Jersey

To Army Medical School, from Camp Dix, Capt. I. D. MINGOS. For instruction, from Camp Dix, Capt. K. F. KESMODEL; from Hoboken, Capt. J. R. DeVELLING.

To Camp John Wise, Tex., from Camp Kelly, Lieut. R. D. HENDERSON, Jersey City.

To Garden City, N. Y., from Camp A. A. Humphreys, Capt. H. D. McCORMICK, Kenvil.

New York

To Army Medical School for instruction, from Governor's Island, Major F. K. HERPEL.

To Camp Dodge, Iowa, base hospital, from Hoboken, Lieut.-Col. J. E. DAUGHERTY, Brooklyn.

To Colonia, N. J., from Hoboken, Capt. J. C. FISK, New York.

To Detroit, Mich., from Camp Jackson, Capt. H. A. GRIFFIN, New York.

To Fort Riley, from Chicago, Capt. A. I. LOWENTHAL, New York.

To Hoboken, N. J., from Camp Jackson, Capt. A. W. BRENNAN, Syracuse.

To Philadelphia, Pa., from Camp Dix, Major C. A. SQUIRES, Binghamton.

To report to the commanding general, Eastern Department, from Surgeon-General's Office, Col. T. W. SALMON, New York.

To Walter Reed General Hospital, D. C., from Camp Dix, Major E. T. WENTWORTH, Rochester.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Capt. J. M. FLYNN, Rochester.

To West Point, Miss., Payne Field, from Riverside, Lieut. H. M. SMITH, Olean.

The following orders have been revoked: *To Camp Dix, N. J.*, base hospital, from Pittsburgh, Capt. J. J. SINNOTT, Mount Vernon. *To Fort Benjamin Harrison*, from Walter Reed General Hospital, Lieut. J. HARKAVY, New York.

North Carolina

To Fort McPherson, Ga., from Camp Dix, Capt. T. E. WILKERSON, Raleigh.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Capt. R. S. CLINTON, Gastonia.

Ohio

To Camp Grant, Ill., base hospital, from Walter Reed General Hospital, Capt. C. L. IRELAND, Columbus.

To Camp Sherman, Ohio, base hospital, from Camp Dix, Lieut. G. F. BARNETT, Painesville.

To Fort Douglas, Utah, from Camp Sherman, Capt. W. E. RANZ, Youngstown.

To Fort Sheridan, Ill., from West Baden, Capt. A. N. WISELEY, Ada.

To New Haven, Conn., from Camp Jackson, Major A. B. SMITH, Elyria.

To Walter Reed General Hospital, D. C., from Hoboken, Capt. K. D. FIGLEY, Toledo.

Oklahoma

To Fort Oglethorpe, from Camp Dix, Capt. W. W. WOODY, Tulsa.

To Mineola, N. Y., Hazelhurst Field, from West Point, Capt. D. A. MYERS, Lawton.

The following order has been revoked: *To Camp Logan, Tex.*, Lieut. E. A. LEISURE, Fairfield.

Oregon

To Washington, D. C., Bolling Field, from Riverside, Lieut. C. W. ROBBINS, Gold Beach.

Pennsylvania

To Camp Boyd, Tex., from Muscle Shoals, Ala., Lieut. A. F. KLUTZ, Philadelphia.

To Camp Dix, N. J., base hospital, from Camp Lee, Lieut. J. G. LOGUE, Williamsport.

To Cape May, N. J., from Camp Dix, Capt. B. F. BUZBY, Philadelphia.

To Detroit, Mich., from Camp Dix, Capt. L. F. STEWART, Clearfield; Lieut. F. P. McCARTHY, Erie.

To Fort McHenry, Md., from Camp Dix, Major W. BATES, Philadelphia; from Surgeon-General's Office, Lieut.-Col. E. L. ELIASON, Philadelphia.

To Fox Hills, N. Y., from Camp Dix, Capt. E. W. COLLINS, Philadelphia.

To Lakewood, N. J., from Camp Dix, Lieut. R. L. LEVERTON, Athens.

To Mineola, N. Y., from Camp John Wise, Capt. C. H. KETTERER, Butler.

To Walter Reed General Hospital, D. C., from Fort McHenry, Lieut. F. S. CHAMBERS, Philadelphia. For instruction, and on completion *to his proper station*, from Fort McHenry, Lieut. N. A. TIMMONS, South Bethlehem.

Porto Rico

To Fort McHenry, Md., from Camp Las Casas, Capt. P. R. CASELLAS, San Juan.

Rhode Island

To Walter Reed General Hospital, D. C., from Lakewood, Lieut. H. D. CLOUGH, Providence. For instruction, and on completion *to his proper station*, from Camp Meade, Lieut. J. E. McCABE, Providence.

South Carolina

To report to the commanding general, Eastern Department, from Camp Jackson, Col. T. J. KIRKPATRICK, Jr.

Tennessee

To Fort McPherson, Ga., from Camp Lee, Capt. D. R. PICKENS, Nashville.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station*, from Fort Benjamin Harrison, Lieut. H. C. LONG, Chattanooga.

Texas

To Biltmore, N. C., from Philadelphia, Major V. V. CLARK, Estelene.

To Camp Pike, Ark., base hospital, from Fort Sheridan, Lieut. F. W. CARRUTHERS, Dallas.

To Chicago, Ill., from Camp Dix, Lieut. M. O. REA, Pottsville.

To Detroit, Mich., from Camp Dix, Capt. L. E. DEVENDORF, Taft.

To Fort Sam Houston, Tex., base hospital, from Camp Dix, Lieut. J. R. WHISENANT, San Antonio.

To Mineola, N. Y., Hazelhurst Field, from San Antonio, Lieut. W. A. BLACK, Marlin.

Utah

To Fort Bayard, N. M., from Camp Dix, Major H. T. WICKERT, Huntsville.

To Hoboken, N. J., from Camp Jackson, Capt. D. K. ALLEN, Salt Lake City.

Vermont

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station*, from Fort McPherson, Lieut. H. F. TAYLOR, Hardwick.

Virginia

To Mineola, N. Y., Hazelhurst Field, from Arcadia, Capt. S. E. BROWN, Norfolk.

To Spartanburg, S. C., from Camp Lee, Major F. H. MILLS.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station*, from Hoboken, Capt. L. N. HARRIS, Harrisonburg.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major F. M. HODGES, Richmond.

Washington

To Fort Des Moines, Iowa, from Camp Dix, Lieut. H. T. BUCKNER, Seattle.

West Virginia

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station*, from Biltmore, Capt. C. R. IRVING, Hansford.

Wisconsin

To Fort Sheridan, Ill., from Fairfield, Ohio, Capt. E. G. FESTERLING, Reedsville.

Wyoming

To Fort Douglas, Utah, from Camp Dodge, Capt. J. H. HOLLAND, Evanston.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg.-Gen. J. W. SCHERESCHEWSKY, proceed to Newport News, Va., and Wilmington, N. C., to inspect research work in sewage disposal.

Asst. Surg.-Gen. T. CLARK (Reserve), proceed to Perryville, Md., to inspect schools to determine whether building should be used as school or hospital.

Surg. JAMES A. NYDEGGER, deliver four lectures on quarantine and immigration at the School of Hygiene, Johns Hopkins University, Baltimore, Md., May 9, 14, 16 and 21.

Surg. JOHN McMULLEN, represent the Service at the School for County and City Officers at Louisville, Ky., May 12-15.

Passed Asst. Surg. R. C. DERIVAUX, represent the Service at the annual meeting of the Central of Georgia Railway Surgeons' Association at Macon, Ga., May 14-15.

Passed Asst. Surg. J. G. TOWNSEND, proceed to Rosedale, Kan., to attend the school for Kansas health officers to be held the week of May 12.

Asst. Surg. THOMAS PARRAN, Jr., proceed to Seneca, Md., for the purpose of giving a talk on rual sanitation on the evening of May 7.

Acting Asst. Surg. E. E. CABLE, proceed to Norfolk, Va., to consult with the Commissioner of Health in reference to the installation of clinic tables.

Acting Asst. Surg. R. E. GRAMLING, proceed to Burley, Idaho; to present the government's program for the control of venereal diseases on June 16 and 17.

Acting Asst. Surg. J. C. MONTGOMERY, proceed to Rosedale, Kan., to attend the school for Kansas health officers to be held the week of May 12.

Acting Asst. Surg. A. R. PILLSBURY, relieved at Hartford, Conn., proceed to the U. S. Public Health Service Hospital at Dansville, N. Y., for duty.

Acting Asst. Surg. FRANKLIN M. SEIBERT, proceed to Palo Alto, Calif., for duty in the U. S. Public Health Service Hospital.

Acting Asst. Surg. MELVIN J. TAYLOR, proceed to the U. S. Public Health Service Hospital at Dansville, N. Y., for duty.

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Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

New Officers.—At the annual meeting of the Shelby County Medical Society, held in Shelbyville, April 10, Dr. Edgar D. Kerr, Westervelt, was elected president; Dr. William G. Turney, Cowden, vice president, and Dr. Roy W. Johnson, Shelbyville, secretary-treasurer.

Personal.—Dr. Albert N. Mueller, health commissioner of Rock Island from 1909 to 1911, and in 1914 and 1915, has been reappointed health commissioner. —— Dr. Herbert Wheeler, for nearly forty years a practitioner of Grant Park, has disposed of his practice and retired from business.—— Dr. Frank G. Andreen has been elected president of the board of trustees of the village of Orion.——Dr. George F. Johnson has been elected mayor of East Moline.

Fort Sheridan Now Military Hospital.—Companies I and G of the Twentieth Infantry, the last of the soldiers of the line remaining at Fort Sheridan, received orders, May 5, to proceed to Fort Riley, Kan., and nothing now will remain at Fort Sheridan excepting the Base Hospital No. 28, under command of Col. William N. Bispham, and the necessary military help.——Major-Gen. Leonard Wood and his staff will reside at Fort Sheridan for the summer.

Tuberculosis Clinic.—A tuberculosis clinic was held in Princeton, May 6, under the auspices of the board of directors of the Bureau County Tuberculosis Sanatorium, acting in conjunction with the Illinois Tuberculosis Association. The program included a discussion of "The Medical Tuberculosis Program for the Progressive County," "Case History in the Diagnosis of Tuberculosis," "Essentials in the Diagnosis of the Early Tuberculosis," and "Inspection in Diagnosis in Early Tuberculosis." The discussion was followed by clinical demonstrations.

Chicago

Blunt Loses Legal Battle.—Dr. Arthur L. Blunt, after a long fight to keep from serving a term in the federal penitentiary for violation of the Harrison Narcotic Act, left for Leavenworth, Kan., May 8, to serve a sentence of two and a half years imprisonment in the federal penitentiary.

Home for Incurables Changes Name.—In recognition of the aid it received from the late Harlow N. Higginbotham, the name of the Chicago Home for Incurables is to be changed to the Higginbotham Home. Mr. Higginbotham was active in the management of the institution for thirty-eight years.

Dedication of Hospital.—At the dedication service of the new Mt. Sinai Hospital, held March 4, the principal address was made by Ignatius Bernard; a fund of $3,500 was started to purchase a roentgen-ray equipment; $1,000 was raised by the auction of door keys, and more than $1,000 was received in donations, by the selling of ward and room privileges. The building has cost about $150,000, and 100 beds are ready for immediate use.

The Speedway Hospital.—Comptroller Warrick of the treasury, ruled, May 3, that the act of Congress providing $3,000,000 for the acquisition by the U. S. Public Health Service of the Speedway Hospital project was not mandatory. Secretary Glass has under consideration a recommendation that the hospital building be purchased for $2,500,000 and the remaining $500,000 of the appropriation be spent in completing and equipping the buildings.

Personal.—Ernest E. Irons, Lieut.-Col., M. C., U. S. Army, has returned from service and resumed practice.——Albert E. McEvers, Major, M. C., U. S. Army, recently returned from overseas, was slightly injured, May 4, when the horse which he was riding, stumbled while attempting to clear a barrier for jumpers, in Lincoln Park.——Walter J. Sullivan, Capt., M. C., U. S. Army, who has been on service with the Fiftieth Division, Fifth British Army, since October, 1917, and who was wounded by a high explosive shell at Chemin des Dames, and after five months in a hospital was transferred to a hospital ship, and later to Malta, has returned from Europe.——Dr. Stephen R. Pietrowicz, James A. Britton and Max Biesenthal have been appointed by the executive committee of the Chicago Tuberculosis Institute, an advisory committee for the president and members of the board of county commissioners, in matters affecting tuberculosis hospitals.——William H. G. Logan, Col., M. C., U. S. Army, has returned from an inspection tour of European military hospitals.——Harry D. Orr, Lieut.-Col., M. C., U. S. Army, has been promoted to colonel and made division surgeon of the Thirty-Third Division.

Conference of Foreign Experts on Child Welfare.—At the invitation of President Wilson, Secretary of Labor, William B. Wilson, and Miss Julia Lathrop, head of the Children's Bureau, ten of the most distinguished foreign experts on child welfare will be present at a two-day conference at the Congress Hotel, May 19 and 20. The foreign speakers are Dr. René Sand, Belgium, professor of social and industrial medicine at the University of Brussels and advisor on medical inspection of the Ministry of Labor; Sir Arthur Newsholme, England, chief medical officer of the local government board; Mrs. Eleanor Barton of the Woman's Cooperative Guild, an organization of the wives of British wage earners which advocates the national protection of maternity and infancy; Sir Cyril Jackson, board of education, London; R. C. Davison, director of the juvenile labor exchanges of England; Dr. C. Mulon of the French War Department, who supervised creches maintained in connection with munition plants; Prof. Fabio Frassetto, Italy, professor of anthropology at the University of Bologna; Mr. Takayuki Namaye, in charge of reformatory and relief work and the protection of children for the Japanese Interior Department; Dr. Radmila Lazarevitch Milochevitch, Serbia, a leader in social service activities; Señorita Maria de Maeztu, Spain, in charge of child welfare work. Discussions will be held concerning (a) the economic and social basis for child welfare standards, (b) protection of the health of mothers and children, (c) child labor, and (d) children in need of special care.

INDIANA

Summoned Before Board.—The State Board of Registration and Examination has, it is said, cited Dr. George Koons to appear before it and show why his license to practice medicine in Indiana should not be revoked. It is alleged that Dr. Koons is guilty of the violation of the Indiana narcotic law and that on March 25, he was fined $25 and costs and sentenced to imprisonment in the county jail for ninety days, but that the jail sentence later was suspended.

Hospital Items.—Irene Byron Tuberculosis Hospital, Allen County, was opened to the public last month.——An appropriation of $135,000 has been made by the Madison County council for a county tuberculosis hospital, to be located one mile southwest of Pendleton, where a tract of 107 acres, including Idlewold, a summer resort, has been purchased for $35,000.——J. M. Miller, Upland, has offered the Grant County commissioners, 133 acres of land for a new county tuberculosis sanatorium.

Personal.—Dr. Edward E. Long, Shoals, has been appointed health commissioner of Martin County.——Dr. Guy W. Seaton has returned to Indianapolis after a year in Washington, D. C.——Carleton B. McCulloch, Lieut.-Col., M. C., U. S. Army, chief surgeon of Base Hospital No. 32, has been cited for bravery by the French government.——The home of Dr. John A. M. Aspy, Hope, was burned recently with a loss of $3,000.——Dr. Paul E. Bowers, state prison physician, Michigan City, who is at present on leave of absence on duty in war service at Sawtelle, Calif., has resigned.—— Dr. Lloyd A. Elliott has returned from France and resumed his duties as secretary of the health department of Elkhart. ——Dr. Clarence E. Cobb, superintendent of the Healthwin Sanatorium, South Bend, has resigned and has been succeeded by Dr. Robert C. Kirkwood, formerly chief of the medical service at the U. S. Army Sanatorium, Fort Bayard, N. M.——Dr. Adah McMahon, Lafayette, who went to France in August, 1918, to work in military hospitals, returned to the United States, April 25.

KANSAS

Welcome Returning Medical Officers.—The Reno County Medical Association, at its meeting, March 31, extended an official welcome to the members of the society who recently returned from military service.

Personal.—Dr. John R. Scott, Major, M. C., U. S. Army, has been promoted to Lieut.-Col., M. C.——Dr. Benjamin F. Williams, Lincoln, has been appointed a member of the

State Board of Control, for a term of two years, beginning July 1.——Dr. Alexander Haggart, Elgin, has been under treatment in the Swedish Hospital, Kansas City, Mo., for the removal of a lipoma located in the submaxillary space and adherent to the carotid artery.

New Officers.—At the annual meeting of the Seventh District Medical Society, held in Hutchinson, the following officers were elected: president, Dr. Boyd H. Pope, Kingman; vice presidents, Drs. John T. Scott, St. John, and John A. Dillon, Larned; secretary-treasurer, Dr. William F. Schoor, Hutchinson.——The annual meeting of the Golden Belt Medical Society was held in Junction City, April 3, and the following officers were elected: president, Dr. Alfred O'Donnell, Ellsworth; vice presidents, Drs. Benjamin Brunner, Wamego, and Clarence C. Goddard, Leavenworth, and secretary-treasurer, Dr. James D. Colt, Manhattan.

MARYLAND

Personal.—Henry J. Walton, Baltimore, Capt., M. C., U. S. Army, has been released from active service and has resumed his work as head of the roentgen-ray department at the University of Maryland Hospital.——Dr. Martin F. Sloan, superintendent of Eudowood Sanatorium, Towson, has returned to his post after a visit of several weeks at his home in San Antonio, Texas.

Evergreen, Jr., Hospital Under Red Cross Control.— U. S. Army General Hospital No. 7, Evergreen, Jr., has recently reverted from military to Red Cross control. The work of the reeducation of soldiers blinded in the war will be under the general management of Mr. L. W. Wallace, while Col. James Bordley, Baltimore, will remain at Evergreen, Jr., as director of the Red Cross Institute, with Charles F. Campbell as his assistant.

MINNESOTA

Advance Date of Meeting.—The chairman of the program committee of the Southern Minnesota Medical Association announces that conditions have arisen to make it necessary to change the day of the summer meeting to be held at Rochester, from June 30 and July 1, as originally announced, to June 23 and 24.

Personal.—Dr. Robert I. Hubert has been confirmed as chief city health officer of St. Paul, succeeding Dr. Gustav A. Renz, deceased.——Kenneth Taylor, Major, M. C., U. S. Army, St. Paul, has been promoted to the rank of Lieutenant-Colonel and placed in charge of medical work in the Balkans, Palestine and Poland, with headquarters in Paris.—— Dr. Edward H. Nelson, formerly mayor of Chisholm, has been appointed health officer of the village.

MISSOURI

Personal.—Dr. E. Haydn Trowbridge has moved his school for nervous and backward children from the suburbs of Kansas City to Kansas City.

Meeting Night Changed.—The St. Louis Medical Society has voted to change its meeting night from Saturday to Tuesday, by a vote of 350 to 96.

Practitioners Fined.—Mrs. Mary Thiel of St. Louis was arrested by the Department of Registration and Education of the State of Illinois for practicing midwifery in Madison County, Ill., without a license and was fined $130.——Dr. Willis V. Smith, Kansas City, charged with prescribing narcotics without first giving addicts a physical examination, thus violating the city ordinance, is said to have been found guilty and fined $1,000, April 21. Six drug addicts were arrested with Dr. Smith, of whom one forfeited a bond of $200; one was fined $50 and sent to the workhouse and the other four were each fined $100 and paroled on condition that they remain away from the physician's office.

The Hyde Case.—After a trial lasting nearly the entire day, Judge Harris Robinson of the assignment division of the circuit court took under advisement the mandamus suit brought by Dr. B. Clark Hyde to compel the Jackson County Medical Society to rescind an order expelling him from the society. It is reported that Judge Robinson believes that the county has the right to try Dr. Hyde on the charge of writing the letter and may take such action as it may see fit, for it is entirely for the members of the medical society to decide whether or not Dr. Hyde is guilty of gross misconduct. The sole question at this time was, in his opinion, whether or not the state medical association had any right to act on an appeal from the Jackson County Medical Society and to order the expulsion of Dr. Hyde from that society.

NEW YORK

Society Bars Reporters.—At a meeting of the Albany Medical Society, April 8, it was voted to exclude all newspaper reporters from future sessions, and it was further decided that no information regarding the proceedings of the society shall be given to the public without having first been passed on by the board of censors.

State May Use Army Hospitals.—The State Hospital Commission has been instructed to inspect the U. S. Naval Hospital at Ward's Island and the army hospitals at Camp Mills and Camp Upton with a view to determining if they can be taken over by the state and used to house insane patients. At present the existing state hospitals are overcrowded to the extent of more than 6,000 patients.

Masonic Memorial Hospital.—At a meeting of the Grand Lodge of the state in New York City, recently, it was reported that a Masonic soldiers' and sailors' memorial hospital is to be built in Utica at a cost of $370,000. The institution will provide free medical care and maintenance for all service men of the order who make application and whose physical condition makes such care desirable.

Women's Medical Society Elects.—The Women's Medical Society of the State of New York at its annual meeting held in Syracuse, May 5, elected the following officers: president, Dr. Elizabeth Burr Thelberg, Poughkeepsie; vice presidents, Drs. Florence I. Staunton, Utica; Sarah J. McNutt, New York City, and Mathilda K. Wallin, New York City; secretary, Dr. Ethel D. Brown, New York City, and treasurer, Dr. Phoebe M. B. VanVoast, New York City.

New York City

Army Hospitals Ordered Closed.—Orders have been issued by Surg.-Gen. Merritte W. Ireland for the abandonment before June 1, of Debarkation Hospital No. 5, at the Grand Central Palace, the army hospital at the Rockefeller Institute, and the one at the Hotel Nassau, Long Beach, L. I. Emergency Hospital No. 4, which is at the Polyclinic Hospital, is also to be given up as a clearing house for men forwarded from base hospitals. About 17,000 wounded men have passed through the debarkation hospital at Grand Central Palace.

Conference on Narcotic Drugs.—A conference of the heads of various city departments was held recently at which a demand was voiced for more stringent laws covering the sale of narcotic drugs and explosives. Health Commissioner Royal S. Copeland submitted recommendations for handling the problem, calling for: (1) definition of drug addicts; (2) registration and identification of drug addicts; (3) passage of a law making it a misdemeanor for a physician to prescribe drugs for an addict without this identification card or for a druggist to honor a prescription without identification; (4) passage of a law making it a misdemeanor to sell narcotics without a prescription; (5) regulation by the State Narcotic Commission of amendments to the sanitary code on the subject.

Personal.—Col. A. Depage, Belgium, is accompanying Col. John Van Schaick, Jr., commissioner for Belgium, for the American Red Cross to this country and will deliver a number of addresses before medical societies thanking Americans for their contributions to Belgian relief.—— William Darrach, Col., M. C., U. S. Army, has been appointed dean of the College of Physicians and Surgeons of Columbia University to succeed Dr. Samuel W. Lambert, whose resignation was accepted by the trustees of the university about a month ago. Colonel Darrach returned to this country in April.——Dr. Abraham Jacobi celebrated his eighty-ninth birthday on May 6. He received many friends who called to pay their respects.——Dr. William E. Studdiford has been appointed professor of obstetrics and gynecology in the College of Physicians and Surgeons to succeed Dr. Edwin Bradford Cragin.

NORTH CAROLINA

Personal.—Dr. John W. Long, Greensboro, formerly Lieut.-Col., M. C., U. S. Army, and commanding officer of Base Hospital Unit 65, A. E. F., was the orator of the day at the Memorial Day exercises in Greensboro, May 10.

Scavenger Supervision.—The supreme court in a recent decision in the case of Ratchford versus the city of Gastonia, has established the validity of a city ordinance prescribing city supervision of the scavenger service and with a levy for such service against the property owners on which the surface closets are located.

Report on Venereal Disease.—The first report on venereal disease in the state as provided for by recent enactment has just been received by the state board of health. According to to the available data for the first month there were reported only 211 cases of gonorrhea; 131 of syphilis; five cases of gonorrhea and syphilis; two cases of gonorrhea and chancroid, and two cases of gonorrhea, syphilis and chancroid. Buncombe county led with forty-four cases, followed by Mecklenburg with forty-two, but Wake county, equally populous, reported only two cases of venereal disease. Better reports are expected by the board as physicians become familiar with the recent legislative enactments.

OHIO

Personal.—Dr. Frank Winders, Major, M. C., U. S. Army, Columbus, director of the medical service at Hoboken, N. J., has been promoted to Lieut.-Col., and has returned from service and will resume practice.——Dr. William H. Booth, Fremont, who underwent operation at the Toledo Hospital recently, has recovered and resumed practice.——Dr. Harry L. Rockwood, acting health commissioner of Cleveland, has received a permanent appointment as health commissioner.

Fight Against Trachoma.—A fight against trachoma is being waged in Portsmouth by state and city officials jointly. The campaign is of interest to other Ohio River cities, in many of which trachoma is believed to be prevalent. As a result of a survey which disclosed hundreds of trachoma cases among Portsmouth schoolchildren, a free clinic has been established. Schoolchildren are being examined and all found with the disease are receiving treatments. It is estimated that there are not fewer than 1,000 trachoma cases in Portsmouth, and a similar situation is believed to exist in other sections which have received heavy immigration from the mountainous southern states, where the disease has long been prevalent.

Hospital District Legislation.—Changes recently made in the laws governing tuberculosis hospitals do not forecast any change in the policy of the state toward these institutions. The hospital measures passed are: The Harter bill, permitting a county which holds membership in a tuberculosis hospital district to provide additional local facilities at its own expense for the care of tuberculosis sufferers, if the district hospital fails to provide adequate accommodations; the Crosser bill, authorizing a county in a hospital district to withdraw from membership and sell its interest to any other county in the district, if this action is approved by the state department of health, and the Gardner bill, authorizing a county in which a municipal tuberculosis hospital is located to establish a county hospital or to buy or lease the existing municipal hospital. All of these measures were drawn to fit special cases. The first two were designed to provide a means of settling difficulties between the counties in the Springfield Lake Sanatorium district, comprising Summit, Stark, Portage, Mahoning and Columbiana counties. The Gardner bill is intended to provide a means to transform the Cincinnati municipal hospital into a county institution. Under former law, no authority for the establishment of county hospitals exists and a county in which a municipal hospital exists may not enter a district organization. "The district hospital law remains unchanged in its essential details," says the state department of health, "and the policy of the department will be to continue encouraging the development of additional districts." Five district tuberculosis hospitals are in operation and two other proposed districts have effected preliminary organizations. Any group of from two to ten counties may by voluntary organization join in establishing a district. It is estimated that the state now has hospital accommodation for only one third of the tuberculosis sufferers who need hospital care.

Cincinnati

Personal.—Dr. Mark E. Bowles, district physician, has resigned.——Egbert W. Fell, Major, M. C., U. S. Army, chief of the neuropsychiatric section of the Walter Reed General Hospital, Washington, D. C., has been released from service and has been appointed resident clinical director of the Cincinnati Sanatorium, College Hill.

Health Prevention Work.—The city health department has asked an appropriation of $194,000 to be used in 1920 for the various phases of preventive disease work. The chief factors planned are special work in tuberculosis among negroes, the establishment of a new division on public health education, the reorganizing of the nursing service so as to have a separate bureau on public health nursing, and the inauguration of a new division on industrial hygiene.

New Department Established by University.—The University of Cincinnati has established in its college of medicine a department in industrial medicine and public health. Under the plans submitted, $100,000 is to be raised by the citizens' committee on finance, for the support of this department for five years. The traning which will be received in this department will make the students competent social and medical engineers and will also enable them to educate the general public as to the value of good health. The course in the new department will be started in October and will be open to graduates in medicine. A portion of the instruction will be given at the college and part at various industrial establishments along the lines now practiced in the cooperative course.

PENNSYLVANIA

Physicians Oppose Narcotic Tax Law.—Pittsburgh physicians, through the Allegheny County Medical Society, have made a protest against the recent amendment to the Harrison law, which increases the tax imposed on the members of the medical profession from $1 to $3. The resolution calls the measure "unjust discrimination against the medical profession in imposing on its members the federal support of a measure distinctly in the interest of the public," and calls for the repeal of the law.

Personal.—Dr. William W. Jones, Pittsburgh, has been commissioned captain in the Medical Corps, Pennsylvania Reserve Militia, and has been assigned to duty with the third infantry.——Dr. Nathaniel Ross, Wilkes-Barre, has been commissioned captain in the Medical Corps, Pennsylvania Reserve Militia, and assigned to duty with the second infantry.——Dr. John B. Lowman, Johnstown, was elected treasurer of the Medical Society of the State of Pennsylvania, April 30, succeeding Dr. George W. Wagoner, deceased.

Philadelphia

Personal.—Drs. Alice M. Seabrooke and Francis O. Allen addressed the graduates of the training school for nurses of the Children's Hospital, May 9, at the New Century Club.

Under-Graduates Hold Meeting.—At the twelfth annual meeting of the Under-Graduate Medical Association of the University of Pennsylvania, May 1, John H. Gibbon, Lieut.-Col., M. C., U. S. Army, professor of clinical surgery in Jefferson Medical College, delivered an address on "The Progress of Surgery During the War."

Clean-Up Campaign.—The week of May 3-10 was appointed as clean-up week and it was estimated that fully 2,600 extra loads of rubbage and materials of various kinds were carted to the dump during that week. Almost the entire city was divided into sections that the carting might be facilitated and both the director and chief of the bureau of city cleaning feel that this has been the most general and effective clean-up week the city has ever had.

Memorial Services for Health Director of Red Cross.—Memorial services for the late Jane O. Delano, former director of the department of health, American Red Cross, was held at the Academy of Music, May 7. Miss Delano died on April 15 in Base Hospital No. 10, Saveney, France. The entire first floor and part of the second was filled with hospital nurses in uniform. On the stage were men identified with the medical service and one hundred nurses returned from overseas. Dr. Edward Martin, late Colonel, and present M. R. C., state health commissioner, presided at the meeting, and addresses were made by M. M. Riddle, superintendent of the hospital training school at Newton, Mass., Brig.-Gen. William Thayer and John H. Finley, commissioner of public health in the state of New Jersey.

Record of Violent Deaths in 1918.—According to the records of the coroner's office, the year of 1918 had an unusual number of murders, suicides, accidents and accidental shootings. There was a marked decrease in industrial accidents, the coroner stated that the latter have steadily decreased since the passage of the workmen's compensation act. The following table shows the accidents for 1917 and 1918:

	1918	1917
Motor Car	223	161
Railroad	106	93
Elevator	24	16
Street car	111	81
Miscellaneous	589	882

In 1918 there were 123 homicides and 211 suicides. Inquests held during the year totaled 5,083. In October, when the influenza epidemic was at its height, 871 inquests were held, a record for the office.

TEXAS

Bills for Lepers Passed.—Two measures in behalf of the lepers of Texas were passed in the state House of Representatives. One repeals the bill appropriating $25,000 to provide for the erection of a leper colony. The other permits the use of this money to relieve victims of leprosy, the relief to be administered by the state health department.

Panhandle Physicians Meet.—The annual meeting of the Panhandle Medical Society, district No. 2, was held at Amarillo, March 18 and 19, and the following officers were elected: president, Dr. John J. Hannah, Quanah; vice presidents, Drs. James R. Wrather, Amarillo, and Francis M. Wilson, Canyon, and secretary, Dr. James J. Crume, Amarillo.

State Health Board Appointments.—The state board of health at its first quarterly session, April 29, announced the following appointments: assistant health officer, Dr. Oscar Davis, Anderson (reappointed); state registrar of vital statistics, Dr. N. V. Perker, Navasota; bacteriologist, Dr. George M. Graham, Austin (reappointed); director of the bureau of venereal diseases, Dr. Horace C. Hall, Laredo (reappointed); director of the bureau of rural sanitation, Dr. Platt W. Covington, Austin (reappointed), and Dr. Douglas Largen, San Antonio, as director of the state health survey.

Personal. — Dr. Thomas A. King, Vernon, has been appointed a member of the state board of medical examiners. ——The mayor of Dallas has appointed the following physicians as members of the municipal health board: Drs. William J. Calvert, Thomas J. Crowe, Joseph W. Bourland, Samuel M. Freedman, John W. Embree, S. L. Scothorne, J. J. Williams, Groesbeck, and Calvin R. Hannah of Dallas.—— Drs. Major H. Leach and Benjamin E. Howell have been appointed members of the negro welfare board of Dallas. ——Dr. Peter H. Scardino, formerly city health officer of Houston, and at present a medical officer on the Italian front, has declined the position formerly held by him as health officer, and tendered him by the city council to take effect on his return.——Dr. Henry B. Combs, Bastrop, has been elected health officer of Bastrop County.——Dr. Sidney J. Wilson has been placed in charge of the free clinic at Fort Worth.——Dr. Paul Gallagher, El Paso, has been elected associate editor of *Southwest Medicine*.——Dr. George H. Sandifer, Abilene, has been appointed a member of the state board of health.——Dr. James H. Ray, Denton, has been elected health officer of Denton County.

WISCONSIN

Antidrug Act Violator Punished.—Dr. John G. Barnsdale, Superior, convicted in the United States Appellate Court last summer for violation of the federal narcotic act, must serve the term of imprisonment of three years and pay the fine of $6,000 assessed against him at that time, as the Circuit Court of Appeals of Chicago, May 2, made a ruling affirming the decision of the lower court.

Personal.—Dr. Bertha V. Thomson has been appointed health commissioner of Oshkosh, succeeding Dr. James R. Bean, Philadelphia, who recently resigned from that position. ——Dr. Carroll D. Partridge, Milwaukee, assumed his duties as health officer of Wausau, May 1.——Gustavus I. Hogue, Major, M. C., U. S. Army, Milwaukee, has been promoted to Lieut.-Col., M. C., and placed in command of an eye, ear, nose and throat hospital in Paris.——Dr. Jacob M. Furstman has been legally confirmed as health commissioner of LaCrosse.——Dr. Clarence A. Baer, Milwaukee, who has been on duty with the American Red Cross in France, expects to resume practice in Milwaukee this month.

Hospital Items.—A three-story building is to be added to the present structure of St. Mary's Hospital, Sparta. New rooms, a new kitchen, laundry accommodations and a heating plant are to be added, and another elevator will be installed. The improvements will cost approximately $35,000. ——The general contract for the building of the Tri-County Tuberculosis Sanatorium near Salmo, Chequamegon Bay, has been let to an Ashland firm. The building, which is to be erected jointly by Ashland, Bayfield and Iron counties, at a cost of $80,000, will be completed this summer.——A hospital to cost $20,000 will be erected at Hartford by Miss Helen Lohr and her associate, Miss Esther Welton.——The Milwaukee branch of the American Fund for French Wounded is raising $6,000 to endow a bed in the Reconstruction Hospital to be built at Rheims, France, as a memorial to Americans.

Report on Charitable Institutions.—In the report of the conditions of the penal and charitable institutions of the state made by the legislature visiting committee to the governor, the institutions were found, as a whole, overcrowded. In many instances feebleminded were found in institutions for the deaf, blind and orphans, in the reform schools and prisons, because there is no other place to put them. An appalling increase of feebleminded with lack of facilities for their accommodation was noted, and immediate sterilization of feebleminded, male and female, in the state was recommended. The School for Dependent Children at Sparta was severely criticized. The committee reports that there seems to be a complete lack of sympathy between the executive and assistants and more than forty out of the 242 inmates are in such low mentality that they should be transferred from the institution. The Home for the Reformation of Women, near Fond du Lac, which has cost about $250,000, is said to be entirely ineffective and the committee recommends $200,000 for new and suitable buildings. At the Industrial School for Girls there was said to have been 247 inmates, 5 per cent. of whom are subnormal, and 20 per cent. of whom are afflicted with venereal disease.

CANADA

Academy of Medicine, Toronto.—At the annual meeting of the Academy of Medicine, Toronto, May 6, Dr. Edmund E. King was elected president; Dr. Jabez H. Elliott, vice president; Dr. Frederick C. Harrison, honorary secretary, and Dr. J. Herbert McConnell, treasurer. The fellowship of the academy is now 500, of whom 132 served overseas. These are now gradually returning to resume practice in Toronto.

Ontario Board of Health and Salvarsan.—Dr. John W. S. McCullough of the Ontario Board of Health states that the action of the Dominion government in refusing a permit to the provincial board to manufacture the German product is the greatest stumbling block to carrying out the Ontario Venereal Diseases Act effectively. Another application has been made to the federal authorities. Since July 1, 1918, there have been reported to the board the following cases of venereal diseases: syphilis, 853; gonorrhea, 1,586; chancroid, 40.

Personal.—Dr. Frederick J. White, Moncton, N. B., has been appointed local representative in medicine by the Soldier's Civil Reestablishment and Invalided Soldiers Commission of Canada.——Dr. Philip I. Nash, New Brunswick, has been appointed to the pension board as specialist in ear, nose and throat for the province of New Brunswick.——Dr. Joseph N. Roy, Montreal, oculist and aurist to the Hotel Dieu Hospital, has been made Laureate of the Academy of Medicine, Paris, France.——Dr. Alfred Massey, Belleville, Ont., has won distinction in the Belgian Congo, where he was medical officer over a battalion of native troops. He has been awarded the rank of major, and has been decorated with La Croix de Chevalier de l'Ordre Royal de Lion.

LATIN AMERICA

Elections in the Lima Medical Faculty.—Dr. E. Odriozola, chief of the editorial staff of the *Crónica Médica* and professor of clinical medicine, has been elected dean of the Facultad de Medicina, Dr. R. L. Flórez, sub-dean, and Dr. M. A. Velásquez, secretary.

Proposed Congress of the Latin American Medical Press.—The Cuban Medical Press Association has appointed a committee, consisting of Drs. Tamayo, Fernández and López Silvero, to start and foster a movement for a congress of the editorial staffs of the Spanish-American medical journals.

Celebration of Núñez' Fiftieth Anniversary.—The Sociedad de Estudios Clinicos of Havana recently presented Dr. E. Núñez, director of the Mercedes Hospital, with a gold medal as a tribute of esteem on the fiftieth anniversary of his entering on the practice of medicine. The presentation was made at a festival meeting presided over by the Secretario de Sanidad y Beneficencia, the chief of the public health service.

Death of Dr. Noguera of Colombia.—Dr. Oscar Noguera, one of the prominent surgeons of Bogotá, Colombia, S. A., has just died. Dr. Noguera had been educated in Germany, and was considered the pioneer in modern surgery in Colombia, having introduced a number of operations. Because of blindness he was compelled to give up the practice of surgery, acting since that time as director of public health of the District of the Atlantic.

New Journal in Cuba.—There has just appeared the first number of a new medical journal, *Revista Cubana de Oftal-*

mologia, published at Havana. The price of subscription is $6 a year. It is the intention to publish it trimestrially, although the first number covers a period of six months, containing two numbers in one volume, as is often the practice in Latin countries. This journal, as its title indicates, will be devoted exclusively to ophthalmologic subjects. The *Revista* is well printed, is illustrated, and contains 226 pages of reading matter. Its editor is Dr. F. M. Fernández and the *secretario*, Dr. J. M. Penichet.

Scarcity of Arsphenamin in Peru.—The *Reforma Medica* of Lima deplores the scarcity of arsphenamin preparations. A single dose of a French neoarsphenamin costs 10 or 12 soles, and any of the drug with a German trademark costs 40, 50 or even 80 soles. Arsphenamin of English and American makes is still unknown in Peru, and the Japanese product sells for about 30 soles, without much demand for it. The price of arsphenamin before the war was about 5 or 6 soles per dose. The consequence of this scarcity of the drug is the pathogenic rehabilitation of syphilis, the editorial declares, and implores the government to take the necessary steps to relieve this intolerable state of affairs. The sol of Peru is equivalent to a little less than 50 cents.

GENERAL

Æsculapian Society to Meet.—The Æsculapian Society of the Wabash Valley, whose membership includes eastern Illinois and western Indiana, the oldest medical society west of the Allegheny Mountains, will hold its annual meeting at Danville, Ill., May 29.

Railway Surgeons Meet.—The Association of American Railway Chief Surgeons, which met at the Commodore Hotel, New York City, May 5 and 6, elected the following officers for the ensuing year: president, Dr. Clarence W. Hopkins of Chicago; vice president, Dr. Duncan Eve, Nashville, Tenn.; secretary and treasurer, Dr. Louis J. Mitchell, Chicago.

Speech Disorder Experts to Meet.—The National Society for the Study and Prevention of Speech Disorder will hold its summer meeting in Milwaukee, July 4, as one of the affiliated societies of the National Education Association. Any one desiring to receive an advance program should address the secretary, Miss Marguerite Franklin, 110 Bay State Road, Boston.

Southern Railway Physicians Elect Officers.—At the annual meeting of the Association of Surgeons of the Southern Railway, held in New Orleans, April 24, the following officers were elected: president, Dr. Harry T. Inge, Mobile, Ala.; vice presidents, Drs. William H. Armstrong, Rogersville, Tenn.; Daniel W. Scott, McDonough, Ga.; Albert R. Wilson, Greensboro, N. C., and William T. Mathews, Greenwood, Miss., and secretary, Miss Edith Foltz, Washington, D. C. Washington was selected as the next place for the annual meeting.

Bequests and Donations.—The following bequests and donations have recently been announced:

St. Vincent's Hospital, New York City, $25,000; St. Francis' and St. Joseph's hospitals, each, $10,000, and Misericordia Hospital, New York City, $2,000, by the will of John E. Manning.

Infants Hospital, Boston, and Industrial School for Cripples and Deformed Children, Boston, each $10,000; Free Home for Consumptives, Boston, the house of testator, Brookline, together with 3,000 feet of land in memory of his son, Frederick W. Thym; Massachusetts General Hospital, $10,000, to be devoted after the death of his wife for an endowment of a free bed; and the Free Hospital for Women, Brookline, all of the residue, personal and mixed, after the payment of bequests and trust funds, by the will of George William Thym, Brookline.

FOREIGN

First Scandinavian Pediatrics Congress.—The *Ugeskrift f. Læger* announces: "The Første nordiske Kongres for Pædiatri is to convene at Copenhagen Aug. 15 and 16, immediately preceding the nordiske Kongres for intern Medicin." The subjects appointed for discussion are acute digestive disturbances with artificial feeding: the etiology, classification and treatment. The main addresses will be by Bloch of Copenhagen and Johannesson of Christiania. The secretary general is Dr. A. H. Meyer, V Boulevard 51, Copenhagen B.

The Spanish Asylum for Orphans of Physicians.—The Colegio del Principe de Asturias is approaching completion so that the candidates are being selected. It is proposed to give the preference to boys between 5 and 10 and girls from 4 to 11, and there will be accommodations for 100 in the completed portion. The asylum is to be maintained in part by stamps which are to be affixed to all medical certificates and other medical documents. Already stamps to the value of 134,881 pesetas have been taken by the fifty different provinces into which the country is divided, and orders for 39,141 pesetas worth are filed.

Invasion of China by American Brewers.—The threatened invasion of China by American brewers owing to the closing down of their business in America by the President's order has stirred the educational and missionary communities of China, and strong protests have already been forwarded to the American minister in Peking to prevent the country from being soaked with beer. The National Medical Association of China favors this condemnation of the proposed introduction of a new evil into China. The people of China have been fighting the opium and morphin dangers and do not wish to see an alcohol problem crop up just as the old ones are disappearing.

Moral Welfare Work in Shanghai.—The Shanghai Moral Welfare Committee, consisting of representatives of about eleven religious and charitable associations in Shanghai, was formed May 16, 1918, for the purpose of effecting the abolition of every form of commercialized vice in Shanghai. This committee proposes to present resolutions before the ratepayers' meetings to secure (1) deletion from the law of the word "brothel," and (2) cessation of examination of female prostitutes by municipal officers and the issuing of certificates to such examinees. It is sought to prohibit placards in streets and advertisements in newspapers of quack remedies for venereal diseases; to publish health cartoons and simple literature on the dangers of venereal disease and their prevention; to organize free treatment places for sufferers of venereal diseases; to discourage the sale of intoxicants and to establish a vice commission to deal with the matter.

Fight on Typhus.—The International Red Cross Committee at Geneva, Switzerland, acting through the American legation at Berne, has invited the United States to name representatives on a joint international commission to consider means and take measures for preventing the further spread of typhus. The cable brings reports of the alarming spread of spotted or exanthematic typhus in eastern Europe, especially in Poland, Siberia and the Ukraine. The epidemic threatens to extend over central and western Europe. The calling of an international meeting to fight the scourge, as was done in Serbia in 1915, was requested of the International Red Cross Committee by the Austrian Red Cross. The general situation affecting the matter in question is now under consideration at the Cannes conference of specialists, who are engaged in preparing reports for submission to the forthcoming international convention of Red Cross societies at Geneva.

International Scientific Relations.—In 1915 the official *Bulletin* of the French Académie de Médecine reported that the Académie had decided to drop from its list of associate members those German scientists who had signed the "Manifesto signed by the 93" upholding the military authorities in their method of conducting the war, protesting that the spirit of German science and the spirit of militarism are one, not in opposition. The Manifesto was issued as a protest against the statements in English and other papers seeking to excuse the German scientists as not upholding "Prussian militarism." When the Allied armies entered Strasbourg they found copies of a similar Manifesto, dated Oct. 16, 1914, which bore the signatures of 3,000 professors and other scientists throughout the German empire. The wording was identical with the "Manifesto of the 93." It bore the notice that it was issued by the "Kaiser Wilhelm Dank," Flottwellstrasse 3, Berlin, and was certified by Prof. D. Schaefer, Berlin-Steglitz, Friedrichsstrasse 7. In 1915, the Académie had been content to drop merely the associate members, hoping to learn that their corresponding members had published later some protest against the ruthless militarism. But, as the contrary has proved to be the case, the Académie, after study of the subject by a committee, voted, March 18, almost unanimously, to drop the corresponding members in the German countries. Consequently, the official *Bulletin* states that all connection has been severed with the following eight German scientists: Erb and Kossel of Heidelberg; Schmiedeberg of Strasbourg; Filehne and Hirschberg of Berlin; Unna of Hamburg, and Benedikt and Adamkiewicz of Vienna. The Académie also voted unanimously against taking part in international gatherings with German scientists who had signed the Manifesto.

LONDON LETTER

LONDON, April 23, 1919.

Graduate Medical Education in London

An elaborate scheme for graduate medical education has been formed, and it is hoped will receive support from the government. Graduate teaching is required for the following classes: (1) physicians in Great Britain who would like to spend a portion of their holidays in getting up to date in all branches of their work, or who wish to spend a few months in learning all that they can about some particular subject in which they desire to specialize, either completely or in conjunction with general practice; (2) medical officers of the Royal Navy, the Royal Army Medical Corps, the Royal Air Force, and the Indian and Colonial Medical Services, who have to attend postgraduate courses at stated intervals; (3) graduates from British colonies, India and Egypt, including those who have recently qualified, and wish to complete their medical education in England, and some senior men who fall into the same category as the men in Class 1; (4) graduates of allied countries, especially Americans, large numbers of whom have in the past studied in Germany and Austria, in many instances simply because they were unable to obtain equal facilities in England, as well as the French, who have hitherto rarely studied abroad, and the Japanese.

All the existing London undergraduate medical schools have agreed to provide the following postgraduate instruction:

1. *General Courses.*—Each medical school will provide annually two courses of postgraduate teaching, each of a fortnight's duration, or one course of a month's duration, at the discretion of the individual schools, a succession of periods being arranged so that such teaching is obtainable throughout the year. The dates of the courses at each school will vary from year to year, so that more or less convenient periods will fall to different schools in different years. Each school will be asked three months in advance to draw up a program which will give opportunities for study throughout the working day in the subjects included in the courses, and will decide how many students can be admitted to each course.

2. *Special Courses.*—Special courses will be arranged in the schools, in which a graduate may have the opportunity of deeper study in any particular subject. Such courses will usually last for not less than three months, and it may be advisable that different parts of the courses should be carried on at different institutions. The special courses will be as comprehensive as possible. For example, a course in disorders of digestion might include: (*a*) lectures by an anatomist, a physiologist, a pathologist, a radiographer, a physician and a surgeon; (*b*) clinical teaching on cases in the wards and outpatient departments and on other cases collected by the teacher from his wards or outpatient departments during the previous six months; (*c*) practical instruction in the roentgen-ray investigation of disorders of digestion by the radiographer; (*d*) practical instruction in chemical analysis of gastric contents and feces by the clinical chemist; (*e*) practical instruction in bacteriologic and microscopic examinations of feces by the pathologist; (*f*) demonstrations on museum and postmortem specimens by a demonstrator of morbid anatomy or by any other physician interested in the subject; (*g*) demonstrations on the use of the sigmoidoscope; (*h*) opportunities for seeing operations on cases already investigated by the students. After having attended such a special course, a graduate may apply to the teacher for permission to do research work under him or to act as his clinical assistant. Facilities will be afforded for students to attend the ordinary hospital practice of the medical schools.

The existing London postgraduate schools and special hospitals which have given postgraduate instruction in the past will continue to do so in cooperation with the other teaching institutions working with the association. There will be no limit placed on the duration of their courses of instruction, which may continue throughout the year.

[NOTE.—See also p. 1484, this issue.—ED.]

Disabled Pensioners

The problem of men disabled by the war is a big one. There are now 600,000 disabled men to whom pensions have been granted, and about 20,000 new awards are being made every week as men are demobilized or discharged from hospital. It is estimated that there will be at least 700,000 temporary pensioners, of whom an unknown number will become entitled to permanent pensions. The government has arranged to take over the orthopedic hospitals from the army and to establish outpatient clinics in surrounding towns and districts under the direction of the surgeons attached to these hospitals; similarly, treatment will be provided in hospitals and outpatient clinics for cases of nervous disease. It is hoped in this way to make a resurvey of patients who will benefit from treatment by orthopedic and nerve specialists and to give a further chance of treatment to those who have, for one reason or another, discontinued it. The number of disabled men who will require industrial training under the government scheme is about 350,000. The men who have lost a limb number 24,000, and those who have received some injury either to a leg or an arm not necessitating amputation, 128,000; it is probable that a large number of these will not be able to carry on the same manual labor as before. The neurasthenics number 36,000, and many of them will require outdoor employment, as would also many of the 60,000 suffering from chest complaints, including tuberculosis. The number of cases of rheumatism is 39,000; some have been cured, but others will require to find indoor work. Of the 54,000 men suffering from heart trouble many may have to change their previous occupation if it involves heavy physical strain. Many of the 10,000 men suffering from deafness will be unfit to go back to their previous employment. The blind who have received training will number 1,435. Of the 350,000 men, some have been cured, but a large number are still under treatment and not yet ready for training; many are capable of resuming their previous occupation, but many more have been attracted by high wages to occupations which may prove to be temporary. At present the ministry of pensions has trained, or has in training, 24,000 men. Arrangements have been made through local war pensions committees, which have 600 schemes, and instruction has been given at technical institutions, agricultural colleges, farms and market gardens. In all the main industries, trade advisory committees have been formed to advise the local committees, but new schemes and a great extension of the training facilities are required.

The Outbreak of Rabies

The occurrence of cases of rabies in the west of England has been reported in a previous letter, after an absence of the disease from this country for more than twenty years. It was stamped out by muzzling dogs in all the affected areas. The disease is supposed to have been introduced by soldiers bringing in dogs from the continent of Europe. The greatest precautions were taken and they were forbidden to do this, but it is supposed that soldiers must have smuggled in dogs to which they had become attached and that some of these dogs were diseased. The number of verified cases of rabies which has occurred in Great Britain in the outbreak is 156, of which two have occurred in the London area. So far, no case of hydrophobia is known. The compulsory muzzling of dogs with a wire cage is in force all over London and in the affected districts of the country. Any dog found at large without a muzzle will be taken to a police station. If the name and address of the owner are on the collar, he will be communicated with, and unless the animal is claimed within seven days it will be destroyed. Dogs suspected of rabies will be destroyed at once. All movement of dogs out of the scheduled areas, except for purposes of quarantine, is forbidden. Provision has been made by the government for the treatment with specific antirabic material supplied by the Pasteur Institute of Paris. The names of all persons reported as having been bitten by dogs suspected of rabies will be sent at once to the health officer.

Longevity of the Limbless

At the opening of a hospital for the limbless, in London, Colonel Openshaw of the London Hospital said that a man who had lost one leg was likely to live longer than if he had not lost it, and that a man who had lost two legs would probably live longer still. It was therefore very necessary to make adequate provision for men deprived of arms or legs as the result of the war. These men were likely to live long and to require attention for many years to come. There was a physiologic reason for his statement about longevity. The heart had to carry the blood to the extremities and, other things being equal, would continue to work longer if the legs were taken away. A man who had lost both his legs could be a better swimmer than before his loss.

Compensation for Miners' Phthisis

Since the passing of a compensation act for miners' phthisis by the first Union Parliament of South Africa, 4,000 miners have benefited, and an outlay of $15,000,000 has been made. The victims in the primary stage have received $1,500 and in the secondary stage $3,750. A new bill has just been introduced increasing the $1,500 to $1,750 and substituting for the

$3,750 a payment of from $50 to $75 per month, subject to residence in the Union. Moreover, in the hope of inducing the miner to leave work underground before his working capacity is impaired, the bill proposes to grant a lump sum of $10,000 to men in what is defined as the "anteprimary stage," when there are physical signs of lung trouble short of definite silicosis.

MEXICO LETTER

MEXICO CITY, May 4, 1919.

The Sixth National Medical Congress

There has just been issued the call for this meeting, which will be held at Toluca, April 18-26, 1920, under the presidency of Dr. J. Terrés. At the closing session of the preceding congress, invitations were received from the three cities of Toluca, Monterey and San Luis Potosi, but as the first invitation was received from the authorities of the state of Mexico, its capital, Toluca, was unanimously chosen. The committee organizing the congress, which also made the arrangements for the first congress on typhus fever, has devoted considerable time to its task, and has designated committees in all the states and territories and asked a number of physicians to discuss various subjects.

In addition to physicians, pharmacists, dentists, veterinarians, engineers and lawyers will be entitled to participation in the congress. The different sections will be: (1) anatomy, histology and physiology; (2) internal medicine (including neuropathology and psychiatry, dermatology and syphilography and medical pediatrics); medical therapeutics, pharmacology, pharmacy, and natural history (medical); (3) surgery and surgical therapeutics, including otorhinolaryngology, andrology and surgical pediatrics; (4) ophthalmology; (5) obstetrics and gynecology; (6) hygiene, medical geography, climatology, and sanitary engineering; (7) legal medicine, medical teaching and ethics; (8) military medicine and surgery; (9) dentistry; (10) veterinary science. The papers to be presented at the congress must be written in Spanish, and not consume more than twenty minutes' time, with the exception of original papers, which will be allowed twice as much time. All the papers must be in writing. Among the subjects suggested by the organizing committee are the following: arterial pressure among Mexicans; histology of the blood of the new-born and of pregnant women; the "mal del pinto"; the treatment of syphilis; the therapy of leprosy; the etiology of cancer; the geographical distribution of goiter; the treatment of glaucoma; the frequency of vertex presentation in Mexico; the use of pituitary extracts in obstetrics; gonorrhea in women; criminal abortion and its prevention; venereal prophylaxis; somatological anthropology and various applications of anthropometry; measures against the use of mariahuana (*Cannabis indica*) by soldiers; treatment of penetrating wounds of the abdomen; the treatment of pyorrhea and bovine pyroplasmosis.

The registration fee is five pesos, and members will receive a volume containing the papers presented and the discussions. All the communications about the congress should be addressed to the secretary, Dr. F. Ocaranza, 2/a Calle de S. Juan de Letrán, No. 19, Mexico City.

Mexican Red Cross

This association has received more than $2,800 as the result of a function organized last month by the ladies of the American colony, who did this to show their gratitude to the Mexican people for their generosity in patronizing the benefits held during the war to collect funds for the allied charities.

The Scarcity of Meat

Beef, which a few years ago sold at 25 cents a kilogram (about 11 cents a pound), has been rising in price until now it is $1.40 a kilogram (about 63 cents a pound). This is considered too much for a country like Mexico, which raises its own cattle, and it is believed the rise in price is due to speculations of profiteers.

The School of Medicine

The School of Medicine is planning to hold, May 5, a *Kermesse* for the purpose of obtaining funds toward the erection of a monument to the late Justo Sierra, who was the founder of the National University and secretary of public education under the government of General Diaz.—Dr. J. Terrés, one of the oldest professors of the School of Medicine and also of the High School, has resigned his positions.

PARIS LETTER

PARIS, April 24, 1919.

Military Pensions

The senate has ratified the action taken by the Chambre des Députés modifying the present military pension system. The new pension rate will be fixed by the degree of invalidism or disability as determined by the Disability Board on the basis of a percentage to be expressed in multiples of five, 100 per cent. being allowed for complete disability. In the case of a private soldier who is completely disabled, the annual pension will amount to 2,400 francs. A supplementary allowance is made to those who are badly mutilated and therefore require the services of an attendant. This allowance will amount to one quarter of their pension. Blind soldiers will receive 3,000 francs annually.

A temporary pension is given to all those who are invalided temporarily for a period not to exceed two years, but this allowance may be renewed biennially after reexamination. At the expiration of any pension period, the pension may be increased or diminished or it may stand as it was if the disability is not considered to be a permanent one; or, if it is permanent, a definite pension will be allowed. No further pension will be allowed if the disability has disappeared, or if it does not incapacitate a man to the extent of 10 per cent. of his working powers. Any pensioner whose pension is still on a temporary basis who may become afflicted by a complication or whose infirmity becomes aggravated, may, without waiting for the expiration of the biennium, ask for a revision of his case, which, then, must be made within two months. The status of the temporary pensioner must be put on a permanent basis within four years, either through the conversion of the temporary pension into a permanent pension, or by the complete withdrawal of the pension. The wounded, the sick or the infirm will have the right to ask a civilian physician to assist in making the examination on the outcome of which the pensioner's status depends.

The new pension rates (in francs), with the degree of disability expressed in multiples of twenty, are given in the accompanying table.

THE NEW PENSION SCHEDULE (IN FRANCS)

Rank in French Army	Degree of Disability					
	10%	20%	40%	60%	80%	100%
Adjudant-Chef	260	520	1.040	1,560	2,080	2,600
Adjudant	255	510	1.020	1,530	2,040	2,550
Aspirant	252	504	1,008	1,512	2,016	2,520
Sergent-Major	249	498	996	1,494	1,992	2,490
Sergent	246	492	984	1,476	1,968	2,460
Caporal	243	486	972	1,458	1,944	2,430
Soldat	240	480	960	1,440	1,920	2,400

Compulsory Notification of Tuberculosis

This question continues to occupy the mind of the medical profession and remains the subject of numerous discussions at the meetings of all medical societies. At the session of the Académie de médecine, held March 25, the discussion of Dr. F. Bezançon's report bearing on this subject was begun. Professor H. Vincent declared himself to be an advocate of this measure and stated that tuberculosis is particularly prevalent in France. In 1912 the tuberculosis mortality rate in France was 211 per 100,000 population. In England it was 137, and in Italy and Spain, 149. In 1913, 84,443 deaths from tuberculosis were registered in France. To this figure should be added the greater part of the deaths from chronic bronchitis (15,277), chronic pleurisy, emphysema, etc. Vincent is convinced that compulsory notification is the necessary first step in the fight against tuberculosis. This is also true of diphtheria, cholera and plague, for only by such notification, followed by the required prophylactic measures, can these diseases be controlled effectively. While it is true that prophylaxis must be applied to the whole social body and is inseparably linked with bacteriologic prophylaxis, the latter is, nevertheless, more important, since it is directed toward the prime cause of the disease, the bacterium, and seeks out and renders innocuous the carriers as well. Contagion stalks in the homes of the rich as well as in the meanest hovel, if the infectious agent is not destroyed. In New York City compulsory notification has lessened the number of deaths from tuberculosis by 6,000 per year for the last twenty years, even before it was possible to take proper measures against overcrowding, filth and bad sanitation. The fight against tuberculosis must be directed against the tubercle bacillus, supported by general prophylactic measures. Compulsory notification is fundamental and essential for this. The work

can be carried on effectively only by securing the cooperation of all other agencies, the dispensaries, sanatoriums, hospitals and house to house visitation.

Compulsory notification has aroused the opposition of the medical profession in every country in which it has been proposed and instituted; nevertheless, these same medical opponents have invariably become the most ardent advocates of the measure when the excellent results obtained by it have become apparent. Neither in foreign countries nor in the departments of France, where the Rockefeller Commission has instituted a campaign against the tubercle bacillus, nor among the 110,000 soldiers invalided for tuberculosis during the war, has material or moral damage accrued to the tuberculous person from compulsory notification. The notification is made discreetly to a sworn medical officer; hence there has been no publicity. Antituberculosis prophylaxis does not mean periodic disinfection with elaborate apparatus of the rooms occupied by the patient; more simple measures, such as those employed in sanatoriums, suffice. The instruction of the patient can be undertaken by the doctor or by the visiting nurse.

The cost of this antituberculosis campaign, based on compulsory notification, is by no means comparable with the enormous benefits, material, moral and social, that will accrue. The present losses from idleness, disease and death due to tuberculosis vastly outweigh the prospective cost. From 1871 to 1914, during the period of peace, at least 4,000,000 of the French people died from tuberculosis. This disease is a more terrible scourge than war.

Dr. P. Reynier, on the other hand, is opposed to notification. He maintains that compulsory notification has been presented in such a beguiling manner as to arouse illusive hopes. All practicing physicians are, Reynier thinks, opposed to this measure because it threatens to do away with the right of privileged communication to which the French people attach so much importance, and which is an honor of the medical profession. Compulsory notification makes a pariah of the tuberculous patient. Then again, compulsory notification, if introduced at all, should not be limited to pulmonary tuberculosis, but should include all other forms — open surgical tuberculosis and tuberculosis in general. Another reason for the hostile attitude of physicians is the possibility of error in diagnosis. In case of error, will the doctor be held responsible? Reynier believes that the real remedy must be found in prophylactic measures.

The Société de pathologie comparée, however, discussed this question and adopted a resolution to the effect that the society is convinced of the need for a campaign against tuberculosis, but that it is not possible to take really effective measures against the disease so long as legislators allow the causes to continue in operation. Compulsory notification of tuberculosis cannot be accepted until alcoholism is combated in a more effective way, and so long as the *bouilleurs de cru* (private distillers, distilling the fruits they raise) are allowed to retain their special privileges. When these preliminary reforms have become operative, the society will declare itself on the question of compulsory notification of tuberculosis, for not until then can the fruits of such discussion have a salutary effect on the public health.

Congress on Social Hygiene

The Congrès d'hygiène sociale, summoned to consider ways and means for the reconstruction of the regions devastated by the war, held its opening session, April 22, at the Sorbonne, under the presidency of M. Henry Paté, a Paris deputy, who is also president of the Comité national de l'éducation sportive et de l'hyiène sociale. Dr. Doizy, deputy of the département des Ardennes, Medical-Inspector Sieur, Professor Pinard, and others, also took part in the proceedings. M. Paté outlined the work in view, stating that it would concern itself not only with the hygiene of the regions devastated by the war, but also with the hygiene of all France, various sections of the congress discussing different phases of the work. Professor Pinard emphasized the importance of the problem of depopulation and outlined the measures to be taken to obviate this very great danger.

Dr. Louis Mourier Receives the American Distinguished Service Medal

General Pershing, commander-in-chief of the American troops in France, acting for the American government, has conferred the Distinguished Service Medal on a number of persons for services rendered during the war; among those so honored being Dr. Louis Mourier, under-secretary of state for the Service de Santé militaire.

Nurse Decorated by the Legion of Honor

Mme. Herminie de Rohan, infirmière-major of the hopital V. G. 81, has been made a chevalier in the Legion of Honor, with the following citation: "For three and a half years she gave her residence for the use of the wounded and founded a surgical hospital which she herself directed. She entered the service as infirmière-major and as infirmière de salle, and without interruption, in spite of poor health, and in a splendid manner, she has always given evidence of the greatest devotion and generosity to all the wounded, wholly forgetful of herself."

Death of Dr. Charles Fernet

Dr. Charles Fernet, professor agrégé on the Paris medical faculty and honorary physician in the hospitals, is dead, aged 82 years. He was made an active member of the Académie de médecine, section on medical pathology, in 1897.

Personal

The following faculty changes have been made in the Ecole de médecine et de pharmacie at Rennes: Dr. Millardet, professor of hygiene and legal medicine, has been made professor of general pathology, internal pathology and legal medicine — a newly created chair.

Dr. Marquis, assistant professor in pathology, clinical surgery and obstetrics, has been made professor of external pathology and clinical professor of genito-urinary diseases. This is also a new chair.

Dr. Bourdinière, assistant professor of pathology and clinical medicine, is now professor of general and applied hygiene, a newly created chair.

Dr. Chevrel, assistant professor of pathology and clinical medicine is now professor of histology, succeeding the late Dr. Perrin de la Touche.

Antituberculosis Measures

The city of Paris and the département of the Seine have interested themselves in carrying out a program of constructing inexpensive homes so as to obviate the danger of contracting and spreading tuberculosis which results from overcrowding. The Office public des habitations à bon marché du département de la Seine, at the suggestion of Mr. Sellier and Mr. Dormoy, has published some maps which show the close relationship existing between overcrowding and increased mortality. This is particularly true of Aubervilliers, Saint-Quen, Gentilly, the nineteenth and twentieth arrondissements — the most populous districts — where the number of poorly lodged persons is the greatest and the mortality from tuberculosis the highest. Besides erecting cheap homes, the city of Paris has also purchased ground in the suburbs, at Champigny, Suresnes and Chatenay, which will be used for the creation of "garden cities."

Marriages

JOSEPH LEO MCGINLEY, Lieut., M. C., U. S. Army, Wilkes-Barre, Pa., on duty at Camp Mills, N. Y., to Miss Alberta Crittenden Allen, of New York City, April 17.

ERIC THORSTON WILLIAMS BOQUIST, Asst. Surg., Lieut., U. S. Navy, Minneapolis, to Miss Elizabeth Bacon of New York City, April 30.

KARL DEAN FIGLEY, Capt. M. C., U. S. Army, Toledo, Ohio, to Miss Margaret Patterson Morgan, of Bloomfield, N. J., April 23.

WILLIAM LORDAN KELLER, Colonel, M. C., U. S. Army, Hot Springs, Ark., to Miss Sara Irvine Greenway, at Hot Springs, April 23.

FRANK A. WILL, Capt., M. C., U. S. Army, Des Moines, to Mrs. Ethel Israel Will, in Kansas City, Mo., April. 29.

JAMES BUMGARDNER MURPHY, Major, M. C., U. S. Army, New York City, to Miss Ray Slater, of Boston, April 26.

CHARLES SIMON RAADQUIST, Hibbing, Minn., to Miss Pauline Swanson, of Warren, Minn., April 23.

OMAR OAKLEY HALL, Milford, Ill., to Mrs. Flore E. Flutro, of Paxton, Ill., at Watseka, Ill., April 22.

FRED C. JAMES, Gadsden, Tenn., to Miss Mary Humphrey of Fruitvale, Tenn., April 23.

JENNINGS SIPE LINCOLN, to Miss Violette H. Fryer, both of Baltimore, April 29.

Deaths

Nathanial Garland Keirle, Baltimore; University of Maryland, Baltimore, 1858; aged 85; a member of the Medical and Chirurgical Faculty of Maryland; since 1897 director of the Pasteur Institute of Baltimore; physician in charge of the Dispensary of the College of Physicians and Surgeons for twelve years; president of Clinical Society of Maryland from 1887 to 1888; demonstrator and professor of pathology and medical jurisprudence and later emeritus professor in these branches in the College of Physicians and Surgeons; medical examiner (coroner) for Baltimore City since 1887; died at his home, May 2.

Andrew Jackson Detwiler ⊕ **Capt., M. C., U. S. Army,** Hannibal, Mo.; University of Michigan, Ann Arbor, 1900; aged 45; who had been on duty at Fort Riley, Kan., and was honorably discharged from the Army, December 7, 1918; state sanitary chemist and bacteriologist of Missouri, from 1902 to 1906; died at the home of his brother in Columbia, Mo., April 22, from the effects of a gunshot wound, believed to have been self-inflicted with suicidal intent, while despondent over ill health.

Henry Edgar Bunch ⊕ **Major, M. C., U. S. Army,** Charleston, S. C.; Medical College of Georgia, Augusta, 1912; aged 29; who had served for two years in France with the British Army; and later rejoined the United States Forces in the Chateau Thierry and Argonne offensives; who had returned home and was awaiting demobilization in Camp Upton, sustained a fracture of the skull in an automobile accident, April 25, and died in the Camp Merritt Hospital, April 27.

Zachariah Turner Sowers ⊕ Washington, D. C.; Columbian University, Washington, D. C., 1870; Bellevue Hospital Medical College, 1871; aged 72; a veteran of the Civil War; founder and for thirty-two years president of the Washington Foundling Hospital; chairman of the board of Legislation of the District of Columbia Medical Society; a member of the visiting staff of the Garfield and Providence hospitals; died at his home, April 23.

William Frederick Hake ⊕ Grand Rapids, Mich.; University of Michigan, Ann Arbor, 1882; aged 57; a member of the staff of the Union Benevolent Association and Butterworth hospitals, for thirty years physician to St. Johns Orphanage, a specialist in diseases of children; for eleven years major and surgeon of the Second Infantry, Michigan N. G.; died at his home, April 26, from pernicious anemia.

Joseph Merzbach ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1883; aged 62; a specialist on internal medicine; instructor in gastro-enterology in the Brooklyn Post-Graduate School; attending physician to the Jewish Hospital, and chief gastro-enterologist to the Jewish Dispensary; consulting physician to the Brooklyn Hebrew Orphan Asylum; died at his home, April 28, from heart disease.

Richard Carney, Windsor, Ont.; University of Toronto, Ont., 1869; Bellevue Hospital Medical College, 1869; aged 76; medical health officer of Windsor in 1898; city physician since 1893; vice-president of the staff of the Hotel Dieu; formerly surgeon of the Twenty-first Essex Fusiliers; consulting physician to the Grand Trunk System; died at his home, April 26, from cerebral hemorrhage.

Stephen J. Young, Terre Haute, Ind.; Medical College of Ohio, Cincinnati, 1851; aged 90; major, assistant surgeon of the 48th Illinois Volunteer Infantry, and surgeon of the 79th Illinois Volunteer Infantry during the Civil War; a member of the staff of the Union Hospital, Terre Haute, for 25 years president of the Terre Haute Savings Bank; died at his home, April 26.

Willy Carl Rudolph Voight, Ann Arbor, Mich.; University of Michigan, Homeopathic Medical School, Ann Arbor, 1918; aged 36; instructor in experimental pathology in his alma mater; died April 28, from septicemia, due to an infected wound of the finger received while performing a necropsy, eight days before.

Samuel Alton Johnson ⊕ Topeka, Kan.; Kansas Medical College, Topeka, 1897; aged 59; demonstrator of anatomy and later professor of electrotherapeutics in his alma mater; a specialist in dermatology; a member of the staff of Christ Hospital, Topeka; died at his home, April 25, from influenza.

William Lee Campbell ⊕ Kansas City, Mo.; Kansas City, Mo., Medical College, 1897; aged 63; an authority on the early history of Kansas City and the Missouri Valley, and a member of the State Historical Society; died in the Willrest Hospital, Kansas City, April 24, from nephritis.

James Albert Nowlen ⊕ Morrison, Ill.; Rush Medical College, 1875; New York University, New York City, 1883; aged 66; local surgeon of the Chicago and Northwestern Railway; county physician of Whiteside County since 1887; died at his home, February 12.

Charles S. Dwyer, Troy, Pa.; Bennett Medical College, Chicago, 1888; aged 62; while walking from Columbia Cross Roads, to Springfield, April 15, was seized with a cerebral hemorrhage, and died at Columbia Cross Roads, a few hours later.

Linus Ira Aldrich, Black Earth, Wis.; University of Iowa, Iowa City, 1888; aged 51; formerly physician of Cerro Gordo County, Iowa; a member of the State Medical Society of Wisconsin; died at his home, April 30, from heart disease.

William C. Baird, Bogard, Mo.; Rush Medical College, 1865; aged 79; a member of the Missouri State Medical Association; was thrown from an automobile, April 23, and died at his home from his injuries, the next day.

Clayton Keith, Louisiana, Mo.; Washington University, St. Louis, 1872; aged 72; secretary of the St. Louis Medical Society in 1874, and city health officer of Louisiana from 1876 to 1891; died in St. Louis, April 22.

James Saunders, Orange, Tex.; University of Michigan, Ann Arbor, 1864; aged 62; local surgeon of the Southern Pacific System; formerly acting assistant surgeon U. S. Army; died in Beaumont, Tex., April 27.

Arthur Hall Drane ⊕ **Asst. Surg., Lieut., U. S. Navy,** Buena Vista, Ga.; Medical College of Georgia, Augusta, 1915; aged 25; died in the City Hospital, Columbus, Ga., April 1, from tubercular peritonitis.

Gustavus Bartlett Morey, Manchester, N. H.; University of Vermont, Burlington, 1878; aged 79; a member of the New Hampshire Medical Society; died at the home of his daughter in Lawrence, Mass., April 29.

Walter Tyler Smith, Sheridan, Ore.; Willamette University, Salem, Ore., 1881; Jefferson Medical College, 1883; aged 50; a member of the Oregon State Medical Association; died at his home, April 19.

Sayer Hasbrouck, Hamilton, Bermuda, formerly of Providence, R. I.; Boston University, 1882; aged 58; a specialist on diseases of the eye, ear, nose and throat; died at his home in Hamilton, March 5.

Edward William Dean, Pittsburgh; Hahnemann Medical College, Philadelphia, 1875; aged 69; a specialist in diseases of the eye, ear, nose and throat; died at his home, April 27, from pneumonia.

William Vernon Kay, Anderson, S. C.; Medical College of Virginia, Richmond, 1916; aged 26; Lieutenant, M. C. N. G. of S. C.; died in General Hospital No. 19, Azalea, N. C., April 10.

Frederick Darwin Burton, Cleveland; Western Reserve University, Cleveland, 1879; Bellevue Hospital Medical College, 1883; aged 53; died at his home in East Cleveland, April 26.

Edward N. Pfohl ⊕ Buffalo, N. Y.; Niagara University, Buffalo, N. Y., 1888; aged 53; a member of the Buffalo Orpheus for more than twenty years; died at his home, April 15.

William Henry Seibert ⊕ Steelton, Pa.; University of Pennsylvania, Philadelphia, 1874; aged 59; a director of several banks; died at his home, April 28, from pneumonia.

Worthy A. Womble, San Antonio, Tex.; University of Tennessee, Nashville, 1891; aged 50; an advertising specialist; died in a hospital in San Antonio, April 24.

Charles E. Nusbaum ⊕ Bremen, Ind.; Northwestern University Medical School, Chicago, 1893; aged 51; died at his home, April 23, from cerebral hemorrhage.

Shepard Voorhees ⊕ Newton, N. J.; University of Pennsylvania, Philadelpha, 1888; aged 59; died April 27, from peritonitis following appendicitis.

Thomas James Nelson, Los Angeles, Cooper Medical College, San Francisco, 1903; aged 40; died in Los Angeles, April 18.

Edward Charles Bubert, Baltimore; College of Physicians and Surgeons, Baltimore, 1893; aged 52; died at his home, April 11.

Jerome Charles Street, Cohasset, Mass.; Harvard Medical School, 1853; aged 91; died at his home, March 26.

⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

TYREE'S ANTISEPTIC POWDER AGAIN

The "Ethical and Commercial Requirements" of the Drug Business

"I am fond of the retail drug business and follow it every day of my life. I know and observe to the fullest extent its ethical and commercial requirements." This from a circular letter recently received by physicians, and signed J. S. Tyree, who asks that he be forgiven for writing to you personally, but there are several reasons why he thinks the circumstances warrant it. All of which is preliminary to calling attention to an enclosure, which accompanies the circular letter, and is described as a "short memorandum" submitted for "your consideration."

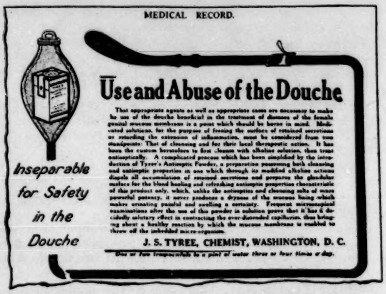
The "memorandum" is a four-page leaflet of which three pages are devoted to "Tyree's Antiseptic Powder." One of these three pages is a reproduction of a letter on the stationery of the Surgeon-General's Office of the War Department, and signed "W. M. Gray, M.D., Microscopist Army Medical Museum; Pathologist to Providence Hospital." The letter describes a series of "bacteriological and comparative tests" made by Dr. Gray with Tyree's Antiseptic Powder. The entire second page of the circular is given over to the results of these bacteriologic tests which compare various strengths of Tyree's Antiseptic Powder with "mercuric bichlorid," carbolic acid and formaldehyde.

The physicians who received this advertising material in April, 1919, might easily overlook the fact that Dr. Gray has been dead several years, that the letter which is reproduced is dated Jan. 3, 1890, and that the bacteriologic tests were made in 1889—thirty years ago!

The Council on Pharmacy and Chemistry in 1906[1] published the results of an analysis of Tyree's Antiseptic Powder which showed that although the stuff was advertised as a mixture of borax and alum, it was in fact essentially a mixture of zinc sulphate and boric acid. The publication of the Council's report in 1906, showing the falsity of the formula, brought out the admission that the composition had recently been changed. Certain it is, however, that for at least a decade past, the Tyree product has been a zinc sulphate-boric acid preparation. Yet, according to the manufacturer's own statement, Tyree's Antiseptic Powder in 1889, when Dr. Gray made his bacteriologic tests, was an entirely different substance from the present mixture.

Here then we have a manufacturer publishing in 1919, in behalf of a certain product, tests that were made in 1889 with a product of different composition, although of the same name! Is this observing "to the fullest extent" the "ethical and commercial requirements" of the "retail drug business"?

There is no scientific excuse for such a mixture as Tyree's Antiseptic Powder. If, however, physicians feel that they must use an irrational conglomeration such as this, why not prescribe Pulvis Antisepticus, N. F.? Like the Tyree product, this, too, is essentially a mixture of zinc sulphate and boric acid, with minute amounts of phenol, eucalyptol, menthol and thymol, to say nothing of a dash of salicylic acid. This official article has at least the virtue of constancy of strength, composition and purity assured under the federal Food and Drugs Act.



in sealed half-ounce vials in wooden cartons bearing the label of
DON'T USE TABLETS
Tyree's Antiseptic Powder in lieu of bichloride tablets, carbolic acid, peroxide of hydrogen, etc. A 25c box makes two gallons, standard solution. All druggists. Booklet & sample free.
J. S. Tyree, Chemist, Washington, D. C.
SANTAL CAPSULES
CATARRH OF THE BLADDER

Examples of Tyree's Antiseptic Powder advertising. On the left is a greatly reduced facsimile of a half-page advertisement appearing in the *Medical Record* in May, 1919; here the product is an "ethical proprietary." On the right is a reduced facsimile of one of the older newspaper "patent medicine" advertisements.

1. At this time Tyree's Antiseptic Powder was an "ethical proprietary"—heaven save the mark!—and advertised only to physicians. Later, as THE JOURNAL has shown, it entered the "patent medicine" field as "ideal for douche" and the "best preventative known." The articles on this nostrum are reprinted in the ninth edition of "The Propaganda for Reform."

Correspondence

SERVICE TO SUPPLY INSTITUTIONS WITH TEACHERS AND RESEARCH WORKERS

To the Editor:—The Federation of American Societies for Experimental Biology, comprising the sciences of physiology, biological chemistry, pharmacology and experimental pathology, is now organizing an information service to serve as a medium of communication between persons seeking positions for teaching or research and institutions that wish to fill vacancies in these sciences. Persons, whether members of the federation or not, and institutions desiring to avail themselves of the service may communicate with Prof. Edgar D. Brown, secretary of the executive committee of the federation, University of Minnesota, Minneapolis, and such information as is available will be supplied without cost to the applicant. Applicants are requested to supply the service with ten copies of their application, which should cover the following points:

1. For the person seeking a position: age; college and university training; degrees received; academic or other positions held; list of scientific papers published; membership in scientific societies; position and salary desired; copies of letters of recommendation; names and addresses of per-

sons who can supply further information regarding the applicant; and any other information that the applicant desires to submit.

2. For the institution desiring to fill a vacancy: title of vacant position; date to be filled; requirements as to teaching or other routine work and research; salary to be paid; prospect of tenure of office and advancement; and any other information that the institution desires to submit.

The service does not undertake to recommend or to pass judgment on applicants. It aims merely to serve as a clearing-house for such information as the foregoing and to bring into touch with one another candidates for positions and vacancies to be filled.

E. D. BROWN, Secretary.

University of Minnesota, Minneapolis.

THE PREHISTORY OF THE CADUCEUS

To the Editor:—In the discussion of the caduceus as a medical emblem (THE JOURNAL, April 26, p. 1243), your commentator states that "whoever recommended its use as a medical emblem in this country has either been conducted by Mercury, his titular deity, to join the souls of the dead in the world below, or is keeping unusually quiet." In regard to this pronouncement, I have made inquiry of Col. John Van R. Hoff, M. C., U. S. Army (ret.), until recently editor of the *Military Surgeon*, and largely responsible for the introduction of the caduceus as part of the insignia on the medical officer's uniform, and have learned from him that it was introduced in 1902 as a badge of neutrality, appropriate to the medical officer as a noncombatant. This point, emphasized in Colonel McCulloch's article in the *Military Surgeon*, is one which your correspondent has overlooked, namely, that "merchants on their trading expeditions, the success of which depended on peaceful negotiations, naturally carried their emblem, the wand of Mercury, and hence it became generally established as the badge of the nonfighting man." In itself, this was better symbolism than the Maltese cross with scalloped edges which appeared on the uniforms of our medical officers prior to 1902. The Romans had a special functionary, the *caduceator*, who was a sort of peace commissioner. Long before Churchill, the London medical publisher, had employed it (1844), the caduceus had been used on the title pages of books published by the famous medical printer Frobenius (1460-1527). It was, in fact, his personal device. As the caduceus took its place in medical heraldry about this time (crest of Sir William Butts), there must have been excellent reasons for using it as a medical symbol, known to the authorities of the period even if not yet discovered. But the caduceus as a mythological symbol goes much farther back than the culture of Hellas, as has been shown in Frothingham's important investigations (*Am. J. Archaeol.*, 1916), of which I propose to give an account in the *Military Surgeon* for June, 1919. If any one will examine the Babylonian caduceus (on a vase in the Louvre) in W. H. Ward's "Seal Cylinders of Western Asia" (1910, p. 129), he will see the starting point of Frothingham's investigation, which goes back to 3500-4000 B. C. For a number of reasons, principally as typifying the mysterious and changeable aspects of life itself, the serpent was always the symbol of medicine in antiquity. The Babylonian caduceus, which also occurs in ancient Hittite remains, stands for an actual serpent god, Ningishzida, who as the special messenger of Ishtar was the awakener of life in the springtime and the Mesopotamian prototype of the Greek Hermes. To the *Freudianer*, both snake and caduceus are libido symbols, i. e., in Jung's definition of the term, symbols of potential energy. To primitive man, the snake undoubtedly seemed the outward and visible sign of those potential energies which are summed up in the phrase, "making medicine." In other words, as Rivers has so admirably shown in his Fitzpatrick Lectures (*Lancet*, 1916), medicine, in prehistoric and primitive civilizations, was and is only one phase of a set of magic, mystic and ritualistic processes which express naught else than the savage's groping and grasping for power. Not to apprehend this is to overlook one of the fundamental postulates of medical folklore. In considering Greek mythology and medicine, it is well to remember that each divinity of the Olympian Pantheon had both a celestial and an infernal (chthonian) aspect, and so could promote health or inflict disease at will. Thus, in Arcadia, Lemnos and Samothrace, Hermes, an ithyphallic deity, was worshipped as the god of fertility in crops, men and cattle (the very essence of "making medicine") and so had undoubted medical functions, if we mean by "medicine" here the power of the gods to inflict and abort disease, which summarizes pre-Hippocratic pathology. It is worth while to note that practically all that we know of Greek medicine in the pre-Hippocratic period has been investigated and developed, not by physicians or medical historians, but by experts in archeology and philology. These researches are little known to the medical profession, and are of comparatively recent date.

The following problems seem worthy of investigation by medical historians:

1. How did the caduceus come to be introduced as a medical symbol (Johann Froben, Sir William Butts) in the early sixteenth century?

2. How did the English medical publisher Churchill come to use it about 1844?

3. How did it come to be employed on the chevrons of hospital stewards of the U. S. Army in 1856?

4. How did the well known and current French periodical of military medicine come to be called *Le Caducée* in 1901?

F. H. GARRISON, M.D., Washington, D. C.
Lieutenant-Colonel, U. S. Army.

TREATMENT OF MALARIA

To the Editor:—Kindly allow me to direct your attention to a point in an editorial on malaria containing a statement which might lead to many failures in the treatment. In THE JOURNAL for Feb. 22, 1919, the paragraph beginning on the ninth line, page 572, is as follows:

> When quinin is given continuously for three days, as just suggested, it should be stopped for about a week and then repeated.

The foregoing should read:

> When quinin is given continuously for three days, as just suggested, it should be stopped for six days and then repeated.

It has been found that after the seventh day of interruption of the use of quinin, spore-bearing plasmodia were sometimes present in cases in which quinin had been given every two hours night and day for two or three full days; this shows that some of the spores which were latent have completed their full cycle, and are again ready to produce spores at the end of this time; consequently, in these cases malaria will not be cured, because some spores of this crop may again become latent and produce further spore-bearing plasmodia later, while if the quinin is given before they have reached the spore-bearing period, namely, before the eighth day, this does not occur. This fact we have demonstrated in many hundreds of cases. For this reason the time of interruption should be definitely stated as six days instead of about one week.

A. J. OCHSNER, M.D., Chicago.

HEALTH INSURANCE

To the Editor:—In THE JOURNAL, May 10, under "Medical News," New York, is an item, "Reconstruction Committee Favors Health Insurance." This committee is a political body appointed by Governor Smith who is the first governor of New York to advocate health insurance from the executive mansion. This reconstruction committee made up its findings after hearing leading "civic workers and insurance authorities." No mention, however, is made in this issue of THE JOURNAL of the fact that the Medical Society of the State of New York, a much more competent body, instructed its delegates to the American Medical Association Meeting in 1919, to oppose in every way the project for compulsory health insurance.

JOHN P. DAVIN, M.D., New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DILUTIONS OF ALCOHOL—CALORY VALUES OF SUGARS

To the Editor:—1. Andrews in his book on "Typhoid Fever" states that in case of collapse whisky should be given, one-half ounce every hour. As we cannot obtain whisky, we shall have to substitute grain alcohol. How much alcohol should be used to equal one-half ounce of whisky? 2. What is meant by whisky 100 per cent. proof? 3. What is meant by alcohol 50 per cent. by volume, or by wine containing 15 per cent. alcohol? 4. How many calories are there in a teaspoonful of milk sugar; how many in a teaspoonful of granulated sugar?

Joseph Hatton, M.D., Sarasota, Fla.

Answer.—1. Two fluidrams of alcohol, U. S. P., diluted with an equal volume of water will be the essential equivalent of one-half fluid ounce of whisky. 2. One hundred per cent. proof means equal volumes of absolute alcohol and water, i. e., 50 per cent. alcohol. When a liquor is 100 per cent. proof, it will burn. 3. Fifty per cent. alcohol by volume means that the solution is composed of equal volumes of alcohol and water. As alcohol weighs less than an equal volume of water, the percentage of alcohol by volume is numerically greater than the percentage by weight. When wine contains 15 per cent. alcohol, it is composed approximately of one volume of alcohol plus five volumes of water (which, in turn, contains some solid substances in solution, and flavors). 4. Granulated sugar yields 1,860 calories per pound; a teaspoonful, approximately from 15 to 20 calories; milk sugar about the same.

FORMULA FOR "PEPTENZYME"

To the Editor:—Will you inform me whether "Peptenzyme" has been passed on by the Council on Pharmacy and Chemistry of the American Medical Association and accepted for use by our members? If not, will you give me the formula?

X. Y. Z., Overbrook, Pa.

Answer.—Peptenzyme was reported on by the Council on Pharmacy and Chemistry along with a number of other products of Reed and Carnrick (The Journal A. M. A., Oct. 5, 1907, pp. 1198-1203). The report, "Reed and Carnrick's Methods," announced that none of the products examined were eligible for New and Nonofficial Remedies. The following is an abstract of the report concerning Peptenzyme:

Pepenzyme elixir and powder are said to contain "the enzymes and ferments of all the glands which bear any relation to digestion;" therefore, the peptic glands, pancreas, salivary glands, spleen and intestinal glands. The preparations are said to be "not chemical extracts, but pure physiologic products." Apparently Peptenzyme powder consists of the glands, dried and powdered, while the elixir is an extract. It is stated that these preparations digest proteids, starch and fat, and in addition stimulate and nourish the digestive glands, and that the ferments in these preparations do not interfere with or digest one another. Examination by the Council showed that these preparations were practically devoid of any power to digest proteids or fat when tested by the U. S. P. method. The claim that the product contained ferments which would not show this activity in the test tube, but become active in the alimentary canal, is contrary to known facts and could not be substantiated by the manufacturer. The claims made for Peptenzyme powder and elixir were held to be unwarranted.

In view of the Council's report and the growing appreciation of the medical profession that mixtures of ferments are absurd, it is to be hoped that Peptenzyme has not been "accepted for use by our members."

BLOTTER INDICATING HUMIDITY

To the Editor:—I have an advertisement blotter that changes color with the changes of the weather. It is surprisingly accurate. In fair weather it is blue; in changeable weather, violet; and when it rains, pink. What chemical produces this effect?

Alfred Hultner, M.D., Belle Plaine, Kan.

Answer.—The blotter is probably impregnated with a solution of cobalt chlorid or cobalt sulphate. Cobalt salts are blue when anhydrous and pink when they contain water of crystallization or when they are dissolved in water.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona: Phoenix, July 1. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.
California: San Francisco, June 23-26. Sec., Dr. Charles B. Pinkham, 904 Forum Bldg., Sacramento.
Colorado: Denver, July 2. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
Delaware: Wilmington, June 17-19. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.
Florida: Jacksonville, June 16-17. Sec., Dr. W. M. Rowlett, Citizens Bank Bldg., Tampa.
Florida: Eclectic Board, Jacksonville, June 9-10. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.
Georgia: Atlanta and Augusta, June 5-6. Sec., Dr. C. T. Nolan, Marietta.
Illinois: Chicago, June 16-19. Supt. of Registration, Mr. F. C. Dodds, Springfield, Ill.
Iowa: Iowa City, June 12-14. Sec., Dr. Clifford H. Sumner, Capitol Bldg., Des Moines.
Kansas: Topeka, June 17. Sec., Dr. H. A. Dykes, Lebanon.
Kentucky: Louisville, July 1-3. Sec., Dr. J. N. McCormack, Bowling Green.
Louisiana: New Orleans, July 1-3. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.
Maine: Augusta, July 1-2. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.
Michigan: Ann Arbor, June 10-12. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.
Minnesota: Minneapolis, June 3-6. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.
Mississippi: Jackson, June 24-25. Sec., Dr. W. S. Leathers, University.
Missouri: St. Louis, June 9-11. Sec., Dr. George H. Jones, State House, Jefferson City.
National Board of Medical Examiners: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.
Nebraska: Lincoln, June 30-July 2. Sec., Dr. H. J. Lehnhoff, 514 First National Bank, Lincoln.
New Jersey: Trenton, June 17-18. Sec., Dr. Alex. MacAlister, 438 E. State St., Trenton.
New York: Albany, Buffalo, New York and Syracuse, May 20-23. Mr. George M. Wiley, director, Exam. and Inspections Div., State Edu. Bldg., Albany.
North Carolina: Raleigh, June 23. Sec., Dr. H. A. Royster, 423 Favetteville St., Raleigh.
North Dakota: Grand Forks, July 1-4. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.
Ohio: Columbus, June 3-6. Sec., Dr. H. M. Platter, State House, Columbus.
Oregon: Portland, July 1-3. Sec., Dr. Frank W. Wood, 559 Morgan Bldg., Portland.
South Carolina: Columbia, June 10. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
Tennessee: Knoxville, Memphis and Nashville, June 13-14. Sec., Dr. A. B. De Loach, Exchange Bldg., Memphis.
Texas: Austin, June 24-26. Sec., Dr. M. F. Bettencourt, Mart.
Vermont: Burlington, June 26-28. Sec., Dr. W. Scott Nay, Underhill.
Virginia: Richmond, June 17-20. Sec., Dr. J. W. Preston, 215 S. Jefferson St., Roanoke.
Washington: Seattle, July 1-3. Sec., Dr. C. N. Suttner, 415 Old National Bank Bldg., Spokane.
Wisconsin: Milwaukee, June 24-26. Sec., Dr. J. M. Dodd, 220 E. 2nd. St., Ashland.

GRADUATE MEDICAL EDUCATION IN LONDON

A scheme for the improvement of postgraduate medical education in London was approved recently at a meeting of representatives of the various postgraduate medical schools and special hospitals. This scheme, as published in the current number of the *British Medical Journal*, is reproduced herewith. It may furnish suggestions of value in the much needed organization of graduate medical education in the large cities in this country.

A SCHEME FOR POSTGRADUATE MEDICAL EDUCATION APPROVED BY THE LONDON MEDICAL SCHOOLS

I. INTRODUCTION

A. A postgraduate association is required in order to meet the large demand for teaching from the following classes of medical graduates:

1. General practitioners in Great Britain who would like to spend a portion of their holidays in getting up to date in all branches of their work, or who wish to spend a few months in learning all that they can about some particular subject in which they desire to specialize, either completely or in conjunction with general practice.

2. Medical officers of the Royal Navy, the Royal Army Medical Corps, the Royal Air Force, and the Indian and Colonial Medical Services, who have to attend postgraduate courses at stated intervals.

3. Graduates from British colonies, India, and Egypt, including those who have recently qualified and wish to complete their medical education in England, and some senior men who fall into the same category as the men in Class I, but who are prepared to devote a longer time to the purpose than English practitioners.

4. Graduates of allied countries, especially Americans, large numbers of whom have in the past studied in Germany and Austria, in many instances simply because they were unable to obtain equal facilities in England, as well as the French, who have hitherto rarely studied abroad, and the Japanese.

B. Hitherto postgraduate teaching in Great Britain has not been encouraged in the medical schools, because the majority have considered that their first duty was to teach their own undergraduate students, and have therefore given very limited facilities to graduates.

C. It should now be recognized that, although the teaching of undergraduate students must not be allowed to suffer, the claims of graduates should also be considered, in order to promote the efficiency of the medical profession throughout the British Empire.

D. The cooperation of America and France should be secured. This could best be done through the recently organized American Postgraduate Union and the Committee of the Société Médicale des Hôpitaux de Paris on "Medical Education in the Hospitals for Foreigners."

II. SCHEME FOR GENERAL AND SPECIAL POST-GRADUATE COURSES

(a) *In the Existing London Undergraduate Medical Schools*

All of these schools have agreed to provide the following postgraduate instruction:

1. *General Courses.*—Each medical school will provide annually two courses of postgraduate teaching each of a fortnight's duration or one course of a month's duration at the discretion of the individual schools, a succession of periods being arranged so that such teaching is obtainable throughout the year. The dates of the courses at each school will vary from year to year, so that more or less convenient periods will fall to different schools in different years. The rota should be drawn up in such a way that each school may know the dates for its courses for the next three years.

Each school, after inquiring from its teachers what instruction or courses they are prepared to give, will be asked three months in advance to draw up a programme which will give opportunities for study throughout the working day in the subjects included in the courses, and will decide how many students can be admitted to each course.

2. *Special Courses.*—Special courses will be arranged in the schools where a graduate may have the opportunity of deeper study in any particular subject. Such courses will usually last for not less than three months, and it may be advisable that different parts of the courses should be carried on at different institutions. The special courses should be as comprehensive as possible. For example, a course in "disorders of digestion" might include:

(1) Lectures by an anatomist, a physiologist, pathologist, radiographer, physician and surgeon.
(2) Clinical teaching on cases in the wards and out-patient departments and on other cases collected by the teacher from his wards or out-patient departments during the previous six months.
(3) Practical instruction in the x-ray investigation of disorders of digestion by the radiographer.
(4) Practical instruction in chemical analysis of gastric contents and feces by the clinical chemist.
(5) Practical instruction in bacteriological and microscopical examinations of feces by the pathologist.
(6) Demonstrations on museum and postmortem specimens by a demonstrator of morbid anatomy or any other physician interested in the subject.
(7) Demonstrations on the use of the sigmoidoscope.
(8) Opportunities for seeing operations on cases already investigated by the students.

3. *Research Work and Clinical Assistantships.*—After having attended such a special course, a graduate may apply to the teacher responsible for the courses for permission to do research work under him or to act as his clinical assistant for a further period. For example, a graduate interested in children's diseases or orthopedics, after attending a course on one of these subjects could then, if he is regarded as sufficiently qualified, stay on at the hospital as clinical assistant and do research work under the physician for children's diseases or orthopedic surgeon respectively. At the same time he could spend an hour or two each day in following the courses given on these subjects during successive fortnights at the different schools and special hospitals. He would thus get quite exceptional opportunities for study.

4. *General Hospital Practice.*—Facilities will be afforded for students to attend the ordinary hospital practice of the medical schools.

(b) *In the Existing London Postgraduate Schools and Special Hospitals*

Those which have given postgraduate instruction in the past will continue to do so in cooperation with the other teaching institutions working with the association. There will be no limit placed on the duration of their courses of instruction, which may continue throughout the year.

(c) *Provincial, Scottish, and Irish Schools*

The medical schools of the United Kingdom will be invited to cooperate with the London Association in providing periodic courses of instruction for graduates, which would run concurrently with those of the former, especially at times, such as the summer months, when the number of graduates would probably exceed the number who could be adequately dealt with in London.

(d) The British Association of Radiology and Physiotherapy has agreed to cooperate.

(e) It is hoped that arrangements may be made to utilize for teaching purposes the unique collections of the Royal College of Surgeons and the clinical facilities of metropolitan asylums, fever hospitals, and Poor Law infirmaries, and opportunities should be given for the study of public health and forensic medicine.

III. THE CENTRAL ORGANIZATION

1. The Council of the association will consist of representatives of all participating teaching institutions, and representatives of the Board of Education, the National Health Insurance (Medical Research Committee), the Dominions, and United States of America. The number of representatives of the twelve London schools serving on the Council shall not be less than the total number of representatives of the other bodies. Care should be taken to arrange for representation of subjects taught as well as of institutions.

2. Steps will be taken to frame such a constitution for the association as will render it competent to hold property and to receive a grant from the Board of Education.

3. The Council of the association will have power to appoint an executive committee and such other administrative committees as may be necessary. The permanent whole-time officers and secretarial staff of the association will be appointed by the executive committee.

4. The home of the association will be a building in central London. It will contain the offices of the permanent (secretarial) staff, together with a library, recreation room, and luncheon and tea rooms. A suitable and well equipped building would become the meeting place for the medical graduates of the empire and allied nations.

5. The permanent secretarial staff of the association will cooperate with the teaching institutions in organizing the courses of instruction, and will issue the necessary advertisements, receive the fees, and arrange for the admission of students to the different courses in conformity with the number of students for which each is open.

IV. FINANCE

1. The participating schools will be under no financial liability in connection with the scheme.

2. It is hoped that sufficient money will be forthcoming from private donations to provide for the erection and equipment of the building and some endowment towards its annual maintenance.

3. Each student on admission will be required to pay a registration fee, which will go towards the support of the association, apart from the fees payable for the courses of instruction. It is proposed to apply to the Board of Education for a grant sufficient to make the association selfsupporting.

4. As any grant from the Board of Education will be paid to the association, the medical schools will not receive any direct government grant for postgraduate education, and will therefore only be responsible to the association for the instruction they undertake to give.

5. The fees payable for the various courses will be decided by the Executive Committee in consultation with the individual schools, the object being to maintain as nearly as possible a uniform standard.

6. Each participating school will undertake to give no organized postgraduate courses independently of the central organization, with the exception of classes for special examinations.

7. The income of the association would thus be derived from:

(1) Interest for endowment fund,
(2) Registration fees paid by students,
(3) Fees for courses, and
(4) Government grants;

and the expenditure would be for:

(1) Maintenance of the association's buildings,
(2) Salaries of permanent secretarial staff,
(3) Advertising, printing prospectuses of courses, etc., and
(5) Payment of participating schools.

V. THE POSITION OF THE UNDERGRADUATE STUDENTS IN RELATION TO THE POSTGRADUATE ASSOCIATION

In arranging the courses of instruction care will be taken to interfere as little as possible with the work of the undergraduate students. In the case of lectures no difficulty would arise from the presence of undergraduate students in seats not reserved for the postgraduates, but admission to all other forms of instruction will be restricted to those for whom the course has been arranged.

Book Notices

A STEREOSCOPIC ATLAS OF PLASTIC SURGERY OF THE FACE, HEAD, AND NECK WITH CASE REPORTS. By Joseph C. Beck, M.D., F.A.C.S., and Ira Frank, M.D., F.A.C.S. Price, $7. Pp. 131, with 90 stereoscopic illustrations. St. Louis: C. V. Mosby Co., 1919.

This stereoscopic outfit has been neatly prepared. It includes a compact stereoscope, a textbook and some ninety stereoscopic illustrations demonstrating the various steps in the technic of the operations devised by these two authors. In the text a brief introduction is followed by a historical summary of the subject, carrying the reader from the time of Tagliacozzi through the rhinoplasty with paraffin, first used by Gesurney of Vienna, down through the recent work of Roe and Lexer. The chapters include work on the palate, the eyelids, the elementary principles of plastic surgery, a new method of using silver wire and a series of quite instructive case reports chiefly devoted to injuries of the nose. The stereoscopic illustrations include nasal defects, total loss of the nose, resection of the jaw, defects of the lip and cheek, restoration of the jaw, reconstruction of the ear, tracheotomy, laryngectomy, etc. On the back of each stereoscopic view is printed a descriptive legend. It is, of course, not presumed that a study of this material will qualify the reader as a plastic surgeon. This involves a delicacy of technic to be acquired

only through practice and experiment. The war produced many face wounds, and the future will demand more men qualified to do this work. The physician who desires to become conversant with the subject will find this outfit of assistance in his study of it.

THE PATHOLOGY OF THE PNEUMONIA IN THE UNITED STATES ARMY CAMPS DURING THE WINTER OF 1917-1918. By William G. MacCallum, M.D. Monograph No. 10 of the Rockefeller Institute for Medical Research. Paper. Price, $1.50. Pp. 147, with 55 illulustrations. New York: The Rockefeller Institute for Medical Research, 1919.

Dr. MacCallum was a member of two commissions appointed by the Surgeon-General of the Army to study the pneumonia existing among troops during 1917-1918. The pneumonia referred to was particularly that following measles. The pamphlet does not cover the severe and fatal bronchopneumonia following the influenza epidemic, except for a short supplementary note. Preliminary reports as to the findings of these commissions have appeared in articles by Dr. MacCallum and others published from time to time in THE JOURNAL. The present volume goes into the matter in considerable detail and supplements it with fifty-three excellent plates illustrating microscopic and macroscopic pathology of the disease.

Social Medicine, Medical Economics and Miscellany

Health Reorganization in England

The readjustment of social machinery to the new conditions following the war, and the agitation for better governmental control of health conditions, have stimulated a discussion in England of social insurance and governmental health organization equal to the discussion that greeted the Lloyd George social insurance bill in 1910. Not only medical journals, but also popular magazines, such as the London *Graphic*, are discussing the proposed state medical service from almost every possible point of view. The *British Medical Journal* for March 8, 1919, contains a lengthy article on "National Medical Treatment," by Dr. William J. Howarth, medical officer of health of the city of London, and Dr. B. A. Richmond, secretary of the London Panel Committee on National Medical Treatment. The editorial pages contain two editorials on the subject, and two out of the five letters in the correspondence department are also given to its discussion. In the article by Drs. Howarth and Richmond, the question is discussed largely from an administrative standpoint. In view of the prominent position occupied by health matters and the social reforms contemplated by the new government, the authors consider it desirable that the medical profession should either have some definite views as to what future action will prove acceptable to it, or be prepared to submit a scheme approved by the majority of the profession for the consideration of the general public. Evidently the ten years' discussion of this question in England has not advanced the medical profession of that country very much farther than is the case with our profession here. Three methods of altering or enlarging the present method of state insurance in England are suggested: (1) additional powers and responsibilities added to the present panel system; (2) the creation of a whole time service, and (3) the establishment of a part time service based on experience gained in panel work. The limitation of medical benefit to insured persons alone cannot continue, in the judgment of the writers. The insurance act accepts no responsibility for the treatment of persons with physical defects at ages prior to the insurance age. The treatment of the uninsured and of those requiring permanent medical treatment and maintenance, many of whom are now under the care of the poor law authorities, would still remain a problem for solution. If insured persons and their dependents were included in a state scheme of medical treatment, it is estimated that the number remaining outside such a scheme would be between one third and one fourth of the total population. This would leave from two thirds to three fourths to be cared for under the government plan. The various administrative difficulties involved would be of such magnitude, in the opinion of the writers, as to make it sound policy to open the state service to every member of the community who desired to avail himself of it. As the prosperity of the state depends on the health of its citizens, it seems reasonable to expect the state to make the provisions necessary for maintaining health by making medical treatment available for everybody, the cost to be met by different members of the community according to their taxable value. If this principle be accepted, it follows that the best medical treatment should be available for every individual. To effect this, all medical services must be coordinated. The question of the control of the proposed health organization at once arises. Drs. Howarth and Richmond suggest that it devolves on the proposed ministry of health, through the creation of central authority delegating executive power to local bodies created for this purpose or adding these powers to local bodies already existing, while the administration of benefits paid should be under the control of the contributors or their elective representatives. As medical benefits would be paid for by the whole community, the administration would devolve on elected representatives of the community, aided by elected representatives of the profession and elected representatives of those insured.

The scheme outlined by the writers to meet the conditions involves minimum essentials for the public, the profession and the local authorities. Those for the public are: (1) the best possible medical treatment available for each individual, including consultations, surgical, dental and hospital treatment, midwifery service and efficient nursing; (2) the freest choice of medical attendants consistent with administrative efficiency. As affecting the physician, the minimum essentials are: (1) the national service to be open and appointments so arranged that the slacker may be eliminated and ample opportunities afforded the beginner; (2) opportunity for competition; (3) limitation of nonprofessional work to the minimum; (4) control of physicians by the profession; (5) encouragement to physicians to improve their knowledge and to bring the general practitioner into close contact with the specialist, thereby creating better *esprit de corps;* (6) satisfactory remuneration; (7) provision for pensions on a contributory basis.

It is interesting at this point to compare these minimum essentials for physicians with the minimum essentials provided for in the resolutions adopted by the House of Delegates of the American Medical Association at the New York session in 1917. These are: (1) free choice of physicians by the insured; (2) payment to be proportionate to the amount of work done; (3) separation of official supervision from professional treatment of the sick; (4) adequate representation of the medical profession on administrative bodies.

The minimum essentials for local authorities are that: (1) The service shall be sufficiently flexible and elastic for further developments; (2) the sickness rates and knowledge gained be so recorded as to be available for local health officers.

Regarding the method of operation, the writers suggest the establishment of central clinics in areas of varying sizes dependent on the population and social status. One clinic might be required for every twenty or fifty thousand population, each clinic to be provided with attending physicians and nurses, clerks to take care of records, etc., and dispensing pharmacists to fill prescriptions. In larger areas, special clinics for special work would be provided, drawing their patients from a series of primary clinics. The details of attendance and care under various conditions are outlined at length.

General hospitals are suggested as necessary to care for those requiring hospital treatment. Naturally a single general hospital would care for the patients from a large number of primary clinics. Minor and major clinics and general hospitals would, of course, each be provided with such bacteriologic, chemical and diagnostic laboratories, equipment and trained workers as would be necessary. Consultants would be attached to the various hospitals and would carry on both private practice in home consultations and state work in hospital consultations on a basis of payment for state work

to be determined by conditions. In places unprovided with hospitals, a small institution suitable for the needs of the district would be established, and in rural districts a modified organization suited to the needs of the community would be developed. In sparsely settled districts, the minor clinics would be replaced by the individual physician and the major clinics and consultation work by traveling clinics. Special operative work and hospital treatment as well as the treatment of emergency cases requiring the care, beyond the ability or resources of the local physician, would be provided for at the nearest general hospital.

Regarding expenses, a tentative estimate is made, admitting present sources of information to be limited. In any district, the fund available would be equal to the total population multiplied by the agreed capitation fee. Physicians would be paid in proportion to the number of units of treatment credited to each during any prescribed period, monthly, quarterly or otherwise. It is estimated that the cost of 27,906 hospital beds in London and the provinces is £2,855,236 (approximately $14,000,000) and that there are at least 45,000 beds provided for in private hospitals at a total cost of £4,500,000 (approximately $22,000,000). In addition there are in public institutions for contagious diseases, insane and feebleminded and the care of the poor, 264,000 beds which are already being paid for by the community, the transfer of which to a new authority would not involve any additional expense. Assuming the population of England and Wales to be 36,500,000, a charge of 13s. ($3.25) per head per annum would amount to £23,725,000 (approximately $118,750,000). Deducting the £4,500,000 for the maintenance of 45,000 hospital beds and £10,000,000 for remuneration of physicians would leave between £9,000,000 and £10,000,000 (from $45,000,000 to $50,000,000) for all the remaining work which would have to be done under the proposed plan.

Several fallacies suggest themselves in considering this estimate. The physician at present is a private practitioner. If he does much work of a high class, he is well remunerated. If he does little work or poor work, his compensation is small. If, however, medical practice is going to be so reorganized as to require each man to do a definite amount of work each day and to come up to a definite standard in his work, the average compensation as it now exists would probably be neither adequate nor fair. Furthermore, if the entire population were given the care which they should have, present hospital accommodations would not be sufficient, since many patients who today need and should have hospital treatment are now deprived of it. There would undoubtedly be considerable saving under such a scheme, as much of the sickness now existing would be prevented and ultimately this would afford a decided margin of saving; but for the first five or ten years at least under the operation of the plan, this saving would not be apparent.

The last section of the article is devoted to pensions for physicians. The plan proposed is that each physician shall contribute to a pension fund an amount based on his salary and annually deducted therefrom, depending on the age of the practitioner at the time he entered the service and varying from 2 to 3.5 per cent. of his annual salary. Optional retirement would be fixed at 60 and compulsory retirement at 65, the amount of pension depending on the length of service, forty years' service entitling the retired physician to two-thirds income.

In the correspondence department in the same issue of the *British Medical Journal* appears a letter from Lieut.-Col. Henry Smith of the Indian Medical Service, protesting against the proposed plan for the "Germanization of the British Medical profession." Government services, he claims, are fit only for third class men, "the stamp of man with little brains and as little character." His communication is mainly a criticism of the internal workings of government services.

The situation in England is essentially different from that in this country because of the following facts:

1. In England the question is a national one; in this country it is a state question.

2. England has already established and in operation a compulsory health insurance plan which includes all employed persons receiving $800 a year or less; this country has not.

3. Social, economic and professional conditions in England differ widely from those in this country.

4. In England the discussion of a proposed ministry of health, analogous to the agitation in this country for a national department of health, alters the situation as it exists in this country, since the two questions are being widely discussed at the same time and various plans proposed for their mutual solution by a single plan.

The bill for the establishment of a national ministry of health is now before Parliament, and its progress will be followed with much interest by physicians in this country.

Medicolegal

Evidence of Employment and Basis for Charges

(*Succession of Levitan et ux.* (*La.*), *79 So. R. 829*)

The Supreme Court of Louisiana, in rendering a decision in favor of the claim of a physician, holds that the testimony of a physician and surgeon, to the effect that he was employed by the mother of his patient, a married woman, rather than by the patient or her husband, and rendered valuable services, for which he considered the mother able to pay, but doubted the ability of the husband so to do, is strongly corroborated by the circumstances that the patient, having succeeded as sole heir to the estate of her mother, hears the testimony, and does not take the stand to question its verity.

It is a matter of common information that physicians and surgeons do not regulate their charges for professional services by any fixed standard of pecuniary value, but, to a certain extent, on the basis of the ability of the patient to pay, and, on that basis, more frequently than otherwise, perhaps, are but poorly compensated. Where such services are shown to have been of the highest value, so far as the life and welfare of the patient were concerned, and the charge is neither unreasonable nor inconsiderate, as compared with the financial ability of the employer, it should be allowed by the court.

The physician in this case rendered professional services to a Mrs. Gordon, daughter of Mrs. Levitan, from about May 27, 1914, until November or December of that year, during which period he successfully performed a cesarean operation on her. There was no issue here as to the value of the services or the necessity of the operation, so far as the life and well-being of the patient were concerned, the real question in the case being one of dollars and cents. In July, 1915, the physician brought suit against Mrs. Levitan and Mr. Gordon, alleging that he had been employed by the former and had performed the operation at her request, and that the latter was cognizant of the fact that the services were rendered and of the necessity therefor; but the case was not brought to trial before the death of Mrs. Levitan in December, 1916, after which the case was discontinued; and in February, 1917, the physician set up the same claim by way of opposition to the provisional account filed by Mrs. Gordon, who was the executrix and sole heir of Mrs. Levitan. It was shown that the physician had been the family physician of Mrs. Levitan and had no acquaintance with Mr. Gordon, but knew that he was a gentleman of very limited means; that Mrs. Levitan brought her daughter to him and requested him to take charge of her; that on November 16 she called him to her house, where her daughter was having convulsions, from kidney trouble; that she was very much excited, and said that she wanted everything done that could be done, and, at her instance, a consultation was had, and the patient was taken to the infirmary, where the operation mentioned was at once performed; that at the infirmary, after the operation, Mrs. Levitan told him to put special nurses on the case, and spare no expense; that he was never, at any time, consulted by Mr. Gordon about the case; and that the services were well worth the amount charged. Attention was called to the circumstance that Mrs. Gordon was present in court when the facts thus recapitulated were testified to, and did not take the stand to deny the truth of the testimony.

The court is of the opinion that the evidence, uncontradicted as it was, and given under circumstances in which it would have been easy and natural for the person most interested to have contradicated it, if she thought that she could conscientiously do so, sufficiently established the employment of the physician by Mrs. Levitan. The provisional account filed by Mrs. Gordon showed only the cash collections which came into her hands, up to the date of its filing, amounting to $9,140.85, against which there were some $4,000 or $5,000 of bills, from which it was inferred that Mrs. Levitan had been engaged in quite an active furniture business. Considering the case as presented, the court finds no sufficient reason for holding that the amount demanded by the physician was unreasonable, or even inconsiderate. Wherefore it is ordered that there be judgment in his favor, recognizing him as an ordinary creditor of this succession, in the sum of $500, and directing that he be placed on the account for that amount, with legal interest thereon from Nov. 16, 1914, until paid.

Allowance for Medical and Hospital Services

(Crescent Coal Co. v. Industrial Commission et al. (Ill.) 121 N. E. R. 171)

The Supreme Court of Illinois holds that, under the workmen's compensation act of the state, an employer was entitled to a credit of but $200, although it expended $744.10 for hospital services, nurses, medicines, physicians, and surgeons in caring for an employee in the illness resulting from his injuries, which terminated fatally. The court says that no question was made but that the services rendered were necessary, and the amount fair, reasonable, and customary for the services performed. They were rendered with the knowledge and consent of the employee and his wife, who became administratrix; and the employer insisted that they should be regarded as part of the compensation. It was not claimed, however, that there was any agreement that they should be so held. On the contrary, the widow stated that she was never told that the amounts were to be taken out of the compensation. If the employer had paid the amount to the widow with the understanding that it was a part of the compensation, it would have been entitled to a deduction of it from future payments, even though it was also understood that the money was to be used for hospital, medical, and surgical purposes, and for nurses, or if it had paid the bills with the understanding that the amount was to be regarded as a part of the compensation it would have been entitled to a like deduction. The employer, however, is not entitled to a deduction for the payment of such expenses without such agreement. A payment made voluntarily or on request must be regarded as having been made gratuitously, or in the expectation of saving the life of the employee or reducing his disability, and reducing the total compensation for which the employer would eventually be liable.

Must Try Suit for Injunction Against Sanatorium

(Giles v. Rawlings (Ga.), 97 S. E. R. 521)

The Supreme Court of Georgia, in reversing an order that refused the plaintiff an injunction, says it appeared from the allegations and prayers of the plaintiff's petition that he was seeking two forms of relief: One wholly to enjoin the operation opposite his residence of a hospital or sanatorium for colored people as being a nuisance per se or in and of itself; the other to prevent its maintenance and operation in such a manner as to constitute a nuisance. As to the latter relief he had no adequate and complete remedy at law, and therefore had a right to invoke the aid of a court of equity. Wherefore, it appearing from the order of the lower court that an injunction was denied solely on the ground that the plaintiff had a complete remedy at law by abatement of the alleged nuisance, and that the court did not pass on the merits of the plaintiff's right to restrain the alleged improper manner of operating the sanatorium, the judgment is reversed, in order that the court below may consider and pass on the facts of the case and determine as to the plaintiff's right to relief.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 9-13.

American Academy of Medicine, Atlantic City, June 9-10.
American Association of Anesthetists, Atlantic City, June 9-10.
Am. Assn. of Genito-Urinary Surgeons, Atlantic City, June 16-17.
Am. Assn. of Indust. Physicians and Surgeons, Atlantic City, June 9.
Am. Assn. of Pathologists & Bacteriologists, Atlantic City, June 16-17.
American Association of Physicians, Atlantic City, June 16-17.
American Climatological & Clin. Assn., Atlantic City, June 16-18.
American Dermatological Association, Atlantic City, June 16-18.
American Gastro-Enterological Assn., Atlantic City, June 9-10.
American Gynecological Society, Atlantic City, June 14.
American Medico-Psychological Assn., Philadelphia, June 18-20.
American Neurological Association, Atlantic City, June 16-18.
American Ophthalmological Society, Atlantic City, June 16-17.
American Orthopedic Association, Atlantic City, June 16-17.
American Otological Society, Atlantic City, June 16-17.
American Pediatric Society, Atlantic City, June 16-18.
American Proctologic Society, Atlantic City, June 7-9.
American Psychopathological Association, Atlantic City, June 19.
American Society of Tropical Medicine, Atlantic City, June 16-17.
American Surgical Association, Atlantic City, June 16-18.
American Therapeutic Society, Atlantic City, June 6-7.
Arizona Medical Association, Globe, June 2-3.
Arkansas Medical Society, Little Rock, May 20-22.
Assn. of American Peroral Endoscopists, Brooklyn, June 5.
Assn. for the Study of Internal Secretions, Atlantic City, June 9.
Congress American Phys. & Surgs. of N. A., Atlantic City, June 16-17.
Connecticut State Medical Society, Bridgeport, May 21-22.
Florida Medical Association, Miami, May 20-22.
Illinois State Medical Society, Peoria, May 20-22.
Maine Medical Association, Portland, June 18-19.
Massachusetts Medical Society, Boston, June 3-4.
Michigan State Medical Society, Detroit, May 21-22.
Missouri State Medical Association, Excelsior Spgs., May 26-28.
National Assn. for Study of Epilepsy, Sonyea, N. Y., June 6-7.
National Tuberculosis Association, Atlantic City, June 12-14.
Nebraska State Medical Association, Lincoln, May 19-21.
Nevada State Medical Association, Lake Tahoe, June 20-21.
New Jersey Medical Society, Spring Lake, June 24-25.
North Dakota State Medical Association, Grand Forks, June 24-25.
Oklahoma State Medical Society, Muskogee, May 20-22.
Rhode Island Medical Society, Providence, June 5.
Southern Minnesota Medical Assn., Rochester, June 23-24.
Western Roentgen Society, Cleveland, June 5-6.

MEDICAL ASSOCIATION OF GEORGIA

Seventieth Annual Session, held at Atlanta, April 16-18, 1919

The President, DR. J. W. PALMER, Ailey, in the Chair

Tonsillectomies in the Army

DR. RICHARD R. DALY, Atlanta: In my experience the operation of choice is the Beck-Schenk and no dissection. With proper anesthesia it can be done in adults in a large majority of cases. When done carefully, all the tonsil is removed with the least amount of trauma and with risk of hemorrhage reduced to a minimum. In cases in which dissection is necessary, the Douglas knife and the finger are all that are required. The chief advantage of this method is that the educated finger tells accurately what is being done all of the time, and thus there is no need for sponging or other delay, and there is less trauma than in any other dissection method.

Thirty-four young men who were not making good in their training because of defective breathing were operated on and restored to their commands in condition to complete their instruction and to go to the field. These men would otherwise have been dropped from the rolls.

Removal of Tonsils

DR. ARTHUR G. FORT, Atlanta: We use two instruments in enucleating the tonsils, (1) the modified Beck fenestrated protected snare and (2) the Beck with the ordinary snare attachment. The preparation of the patient begins about one week before operation. He is given calcium three times a day to increase the coagulability of the blood, and often the general condition of the tonsil is much improved by the treatment. I prefer general anesthesia, preferably ether, unless there are contraindications.

DISCUSSION ON PAPERS OF DRS. DALY AND FORT.

DR. WILLIAM C. LYLE, Atlanta: There are indications against the use of general anesthesia in some cases, so that occasionally we have to resort to local anesthesia; but all things considered, general anesthesia is preferable for tonsil-

lectomy. I do not remove both tonsils at the same sitting. I remove one and then wait a week before removing the other.

DR. H. W. TERRELL, LaGrange: I agree with Dr. Daly that tonsillectomy should be done under general anesthesia. In the last three years I have operated in only one case under anesthesia. Dr. Lyle stated that he removes one tonsil and then waits a week before removing the other. If he is able to get the patient to return for the removal of the second tonsil he has been more fortunate than I have been.

DR. R. R. DALY: If we can remove the tonsils without trauma under general anesthesia and can induce the patients to have both tonsils taken out at the same time, we should do so.

DR. A. G. FORT: I cannot agree with Dr. Terrell that we should always remove the tonsils under general anesthesia. In some instances you must do so under local anesthesia. A few days ago the vocational board referred to me a man who had tuberculosis. To give him a general anesthetic would endanger his life very much, and to allow the tonsils to remain as they were would reduce his vitality, and therefore also endanger his life.

Radium Therapy for Uterine Hemorrhages

DR. O. D. HALL, Atlanta: I have used radium in seventy-five malignant cases. Seventy-four cases were inoperable; one case was operable. This patient is living, is in good health, and has had no more hemorrhages since the first application of radium. Of the seventy-five cases treated, the hemorrhages of ten patients were not controlled; five of these had had a hysterectomy. At the time of treating these patients, each had an extensive recurrence, extending into the pelvis. In fifteen of the seventy-five cases the cautery was used. Of the seventy-five cases a history was obtained of uterine hemorrhages of from one to six years' duration before the malignancy was discovered. None of the non-malignant cases treated by radium have had malignancy to date. This report runs over a period of three years.

DISCUSSION

DR. L. C. ALLEN, Hoschton: A striking feature in these cases is the length of time the uterine hemorrhages had existed before treatment was instituted. Uterine hemorrhage from a woman, especially at the menopause, is a matter of grave consideration. Every case should be investigated thoroughly and patients should be taught that any hemorrhage, any excessive menstruation occurring at this period of life, should receive just as serious attention as if it occurred before the menopause or after the menopause. These hemorrhages sometimes are attributed to the menopause, when, as a matter of fact, they are due to something else, frequently a very important pathologic condition that should receive very careful and painstaking investigation

Medical Inspection of Schools

DR. M. M. MCCORD, Commissioner of Health, Rome: After visiting the public schools for two years I found that about 25 per cent. of defective children were unable to pay a physician or dentist for correcting their defects. It was decided that to meet the demands of such conditions, a children's free clinic must be established. A quick response followed from every organization in the city and county when the purpose of the clinic was explained, so in a very short time all necessary funds were in hand. The surgical, medical and dental outfits were purchased and the clinic located in the municipal building. Every physician and dentist in the city volunteered his services to the clinic. A competent clinic and a follow-up nurse were employed. Since the children's clinic opened, July 1, 1918, about 400 children whose parents were not able to pay have been treated at this clinic.

Health Organization

DR. M. F. HAYGOOD, director, Division of Rural Sanitation and Epidemiology, Atlanta: The commissioner of a health department must be able to get the maximum of service from each member of his department. He should have frequent conferences with the members of his force. His clerk should be able to write letters and keep accurate records. She should be taught how to examine for hookworm, also to do malarial and other bacteriologic microscopic work. The school and community nurse should assist in all school examinations and be taught how to find all physical defects. She should do follow-up work to see if the defects are corrected, and if not, make every effort to have this done. She should do child welfare work and look after the tuberculous. The sanitary inspector should be armed with a code of sanitary regulations and inspect frequently all spaces where food and drink are handled. He should also visit all country or suburban homes not having sewerage nor sanitary closets, and persuade the owners of such homes to install these sanitary conveniences.

The Feeding of Babies During Acute Illness

DR. W. A. MULHERIN, Augusta: In all acute febrile diseases the baby should be given less food and more water than in health. In bottle-fed babies this can be easily accomplished by simply increasing the dilution of the food. In breast-fed babies less food can be given by shortening the length of time at breast, lengthening the intervals between nursings and giving water freely between nursing hours. Sick babies tolerate fats very poorly, therefore this ingredient of the food should be reduced, or excluded temporarily. Intolerance to fats lasts much longer than intolerance to carbohydrates and proteins. Therefore, sick babies, artificially fed, should receive formulas made up from fat-free milk, or from skimmed milk containing from 1 to 3 per cent. of fats. As fats and carbohydrates are interchangeable for a short time without being detrimental to the baby's health, the diet should consist largely of carbohydrates, such as barley water, rice water, or gruels made from carbohydrates.

Do not attempt to cure an acute illness, and at the same time fatten a baby; the two things are practically impossible of accomplishment. It is just as important to observe regular hours of feeding, in cases of sick babies, as it is to carry out such procedure with well ones. Ordinarily, however, food should not be given oftener than at three-hour intervals. Some infants and children are so acutely ill that they will refuse all food for several days, and it is only with great difficulty that enough water can be introduced into their system to prevent serious conditions arising from dehydration of tissues. In such cases forced feeding with tube and rectal drip, with 5 per cent. glucose solution, will be found life saving. In babies about 1 year of age, or older, I have found buttermilk to be of great value in feeding during acute illness. It has the advantage of not forming large, tough curds in the stomach, as is so frequently the case when raw cow's milk is used. The reason is that the casein in buttermilk is a lactate of casein, and the rennet of the stomach does not act on it to coagulate it into curds.

Congylonema Scutatum

COL. CHARLES WARDELL STILES, Fort McPherson: A short time ago Prof. Henry G. Ward of the University of Illinois had a parasite submitted to him from a patient in Arkansas. The patient was a girl, 16 years of age, who showed considerable digestive disturbance, vomiting, nervousness and fever, for a number of months. Finally, a small thread worm was discovered crawling around under the mucosa in her mouth. This worm was extracted and she recovered. Ward believes that this parasite is identical with the parasite found in the esophageal wall of swine.

Just before America entered the war a specimen was sent to me for investigation from Bushnell, Fla. It came from a white girl, 13 years of age. About a year previously she began to have fever of a very irregular character, accompanied by nervous disturbances, and other symptoms. Many diagnoses were made of her case. Finally this thread worm was discovered in her mouth. It was extracted and she recovered her health. These are the only two cases of this particular thread worm that are known. It is well worth while for physicians to be on the lookout for such cases even though they are rare, for in irritable, nervous children these parasites may be present.

Effect of Influenza on Arrested Pulmonary Tuberculosis

DR. ARCH ELKIN, Atlanta: Out of the entire number of influenza cases seen by me, I have selected seven. Four of

these patients had been under treatment previously for active tuberculosis. The other three patients showed on recent examination active physical signs of pulmonary tuberculosis in addition to manifest evidence of healed lesions. This evidence was corroborated by means of the roentgen ray. It is not surprising that influenza reactivates arrested or apparently cured lesions of tuberculosis. One of the interesting points, however, is the fact that many cases observed, both in private practice and otherwise, show a reactivation of the primary lesions, which in most instances is confined to the apexes, and in addition positive activity in the base of the lung.

What We Have Done in Georgia to Aid in the Control of Venereal Diseases

DR. JOSEPH P. BOWDOIN, Surgeon, U. S. P. H. S., Atlanta, Ga.: In our campaign for the control of venereal diseases, we decided that education of the masses, of the young men in particular, was of the greatest importance. Other measures adopted were: free Wassermann and laboratory diagnosis, with free arsphenamin to those not able to pay for it; reporting by physicians to enable us to place infections and to keep track of the itinerant carrier; organization of clinics and aid in conducting them, that free treatment could be given in the more populous centers, especially near cantonment zones where the population was dense; repressive measures; closing the red light districts as a war measure (they should be kept closed forever). We have been endeavoring to have the necessary laws enacted by the state and cities to suppress prostitution and control the sources of infection. In our educational campaign we have addressed over 80,000 people. We have shown the government moving picture "Fit to Fight" to men only and women only in a number of the larger towns.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

April, 1919, **2**, No. 4.

Vernal Catarrh or Exuberant Pericorneal Conjunctivitis. J. de J. Gonzalez, Leon, Mex.—p. 233.
Vernal Conjunctivitis in Cuba. J. S. Fernandez, Havana, Cuba.—p. 241.
Trachomatous Changes of Carbuncle. K. Hiwatari, Kyoto, Japan.—p. 243.
Ophthalmic Practice of Today and Bearing on Undergraduate Ophthalmic Teaching. H. Woods, Baltimore.—p. 245.
Training for Ophthalmic Practice. E. Jackson, Denver.—p. 250.
Causes of Heterochromia Iridis: Paralysis of Cervical Sympathetic. F. P. Calhoun, Atlanta, Ga.—p. 255.
Sympathetic Iridocyclitis and Possibly Related Processes in Other Parts of Body. D. F. Harbridge, Phoenix, Ariz.—p. 269.
Report on Onchocercosis. T. M. Izquierdo, Guatemala, C. A.—p. 274.
Stereoscopic Silhouettes for Testing Estimation of Distances. H. V. Würdemann, Seattle.—p. 275.
Gonococcic Dacryocystitis. F. M. Fernandez, Havana, Cuba.—p. 277.
Friendship Between Donders and von Graefe. M. A. Van Herwerden, Utrecht, Holland.—p. 277.

American Journal of Roentgenology, New York

March, 1919, **6**, No. 3.

Unsuspected Foreign Body as Frequent Cause of Chronic Bronchitis. D. R. Bowen, Philadelphia.—p. 111.
*Roentgen Ray and Radium in Treatment of Basal Cell Epithelioma. G. M. MacKee, New York.—p. 119.
Roentgen Ray Indications for Tooth Extractions. B. C. Darling, New York.—p. 136.
Gas Gangrene of Leg Due to B. Welchii: Case Diagnosed Roentgenologically. F. A. Sprague, Camp Zachary Taylor, Ky.—p. 145.
Mechanics of Stomach After Gastro-Enterostomy. J. T. Murphy, Toledo.—p. 148.
Roentgenographic Study of Osteitis Deformans. C. W. Perkins, New York.—p. 151.

Roentgen Ray and Radium in Treatment of Basal Cell Epithelioma.—Of the 258 patients treated by MacKee, 222 remained under observation for at least a few months. Among these 222 cases there were 201 clinical cures, or 90 per cent. Fifteen patients were improved; in six instances, the lesions were not even benefited. The cases were not selected. Among 158 cured cases observed for periods of from six months to five or more years there were twenty-four relapses, leaving a total of 85 per cent. of possible permanent cures. Sixteen cases were observed for five years or more with only one relapse, or about 94 per cent of supposedly permanent cures. Forty-six cases remained under observation for four years. In this series there were nine relapses, leaving 80 per cent. of probable permanent cures. Seventeen cases were followed for three years in which there were three recurrences, or 82 per cent. of cures. Of the two-year cases (about two years), there were thirty-two, with five relapses, or 84 per cent. of cures. Thirty-four cases were observed for about one year with five recurrences, or 85 per cent. of cures. Thirteen cases were followed for six months, with one relapse, 92 per cent. of cures. Finally, forty-three cases were observed for from one to five months. In this series there were no relapses. Nineteen of the twenty-four patients with relapses were treated again with the roentgen ray, and seventeen recovered. The two patients who did not respond to the roentgen ray also did not improve under the influence of radium. Two of the patients with recurrences were cured with radium and two by surgical incision. In five cases relapses occurred a second time within a year after the second recovery. In four of these cases the lesions again disappeared under further roentgen-ray treatment; one patient failed to respond either to the roentgen ray or radium. From this it will be seen that a relapse should not cause unnecessary alarm.

American Review of Tuberculosis, Baltimore

April, 1919, **3**, No. 2

*Tuberculous Infection. II. Description of Plastic Models (Reconstructions) of Conglomerate Tubercle and Surrounding Structures in Human Lung. W. S. Miller, Baltimore.—p. 65.
*Fundamentals of Nutrition of Tubercle Bacillus: Utilization of Some Amino-Acids and Ammonium Salts. E. R. Long, Saranac Lake, N. Y.—p. 86.
*Differentiation of Early Tuberculosis and Hyperthyroidism by Means of Epinephrin Test. N. C. Nicholson and E. Goetsch, Trudeau, N. Y.—p. 109.
*War Against Tuberculosis. W. C. White, Rome, Italy.—p. 118.

Reconstruction of Conglomerate Tubercle and Surrounding Structures.—A description of plastic models of a tubercle and the surrounding framework in a human lung is given by Miller. The tubercle came from the lung of a man who had died of pulmonary tuberculosis. It was situated at the periphery of the lung but did not extend to the pleura. It was sectioned serially and the outlines of each of the seventy-six sections of the series were drawn, magnified 50 diameters, on separate sheets of paper and then transferred to wax plates and the various parts cut out. By this method of study it was found that the tubercle did not belong to any single system of air spaces. It lay between two bronchioli and involved the respiratory bronchioli that arose from the right side of the other bronchiolus, together with their alveolar ducts and many of their atria and alveolar saccules. Many of the latter were greatly reduced in size, while others were greatly dilated. The deformity of the air spaces was so great that they were often difficult of identification. This deformity was to a large extent due to the mechanical pressure exerted by the tubercle or to the closure of the openings by which the air spaces communicated with the bronchial tree.

Metabolism of Tubercle Bacilli.—Long reports the results of studies which he has made on the chemical interactions that go on between tubercule bacilli and various mediums on which the former were grown. The tubercle bacillus was grown on a pepsin digest of casein and on biuret-free trypsin and acid digest, much better growth taking place on the former, characteristic proliferation occurring, however, on the latter. Nitrogen analyses of inoculated peptone mediums showed a withdrawal from the mediums of both peptone and amino-acid nitrogen, with a production of ammonia. Good growth occurred on glycerol-sodium-chlorid-phosphate mediums containing tenth-molecular concentration of urethane (ethyl ester of amino-formic acid), glycerol (amino-

V. 191

acetic acid), and alanin (amino-propionic acid). The acid amids were also readily utilizable. The corresponding ammonium salts of fatty, ketone, and hydroxy acids did not permit growth. The amins of the three acids mentioned, that is, ammonia, methyl amin and ethyl amin, afforded good growth when used in the form of their hydrochlorids. Methyl and ethyl alcohols were added to ammonium chlorid mediums with advantage. The ammonium salts of the dibasic acids, oxalic, malonic, succinic, malic, and tartaric acids, yielded excellent growth. The course of nitrogen metabolism in a medium containing as its source of nitrogen the dibasic amino acid amid asparagin, was followed, and the amid group was found to be the one chiefly attacked, liberation of ammonia from this group taking place while the amino group was almost untouched. In the monobasic series, the amino group is more readily used than the amid.

Differentiation of Early Tuberculosis from Hyperthyroidism by Epinephrin Test.—For three years Goetsch has been practicing the subcutaneous injections of 7.5 minims of a 1:1,000 solution of epinephrin chlorid in patients who present marked symptoms of hyperthyroidism, but in whom no positive diagnosis can be made by ordinary methods of examination. If the patient, following the epinephrin injection, reacts with manifest symptoms of hyperthyroidism, Goetsch believes that a positive diagnosis of the condition is justified. At the Trudeau Sanatorium, Nicholson and Goetsch tested forty patients by this method. Of eighteen patients whose diagnosis was "clinical tuberculosis, questionable," ten reacted positively and eight negatively; of sixteen with a diagnosis of "clinical tuberculosis, inactive," nine reacted positively and seven negatively; and of six with active clinical tuberculosis, none reacted positively. The authors conclude that the test is a valuable aid in determining whether the disease from which patients are suffering is purely a tuberculosis, a tuberculosis complicated by hyperthyroidism, or a pure hyperthyroidism. Hyperthyroidism, whether or not associated with tuberculosis, will give a positive reaction to epinephrin. Tuberculosis, uncomplicated by hyperthyroidism, does not react positively to epinephrin. They feel that in a considerable number of border-line cases presenting symptoms more or less characteristic of both conditions, they can now pick out those suffering with hyperthyroidism.

War Against Tuberculosis.—White summarizes some impressions that he has obtained as the result of his experiences in antituberculosis organization in France and Italy during the war. He mentions the conditions that are peculiar to each country involved and insists that to be satisfactory organized efforts must not necessarily follow a fixed model but must fit local conditions. In France, England and America the trend is to centralize the administration of all public health problems in a ministry of health. This centralization has not yet become a burning question in Italy, but even with this centralization of power there must come, if the problems are to be handled properly, such an immediate decentralization as will make it easy for the province and city to undertake their own problems, with a maximum of liberty in the development of the equipment necessary to handle their task.

Archives of Neurology and Psychiatry, Chicago

May 1, 1919, 1, No. 5.

*Microscopic Study of Fat in Cerebral Cortex. O. J. Raeder, Boston.—p. 525.
Psychologic Study of Stealing in Juvenile Delinquency. L. P. Clark, New York.—p. 535.
*Peripheral Nerve Injuries. G. E. Price, H. O. Feiss and W. B. Terhune, American Red Cross Hospital No. 1, France.—p. 547.
Case of Vagotonia. A. C. Reed, San Francisco.—p. 560.
Contracture Occurring in Partial Recovery from Paralysis of Facial Nerve and Other Nerves. W. G. Spiller, Philadelphia.—p. 564.
Cerebello-Bulbar Polioencephalitis Originating During or After Epidemics of Influenza and Poliomyelitis. Case of Lethargic Encephalitis. C. K. Mills and G. Wilson, Philadelphia.—p. 567.
*War Neuroses as Physiologic Conservations. S. I. Schwab, St. Louis.—p. 579.

Fat in Cerebral Cortex.—Three apparently normal brains from persons of about the same age and of the same sex were examined by Raeder. One of the specimens was obtained from a case in which trauma caused the death. In the other two cases, death was due to bronchopneumonia. In both these cases there was a slight edema of the pia-arachnoid membranes. The consistency of both brain specimens was said to be normal. The somatic changes were similar, being due to an acute bronchopneumonia in both cases. Besides this there were acute changes in the liver, kidneys and spleen, and in one case slight hypertrophy of the heart with some dilatation of the right side. Twenty blocks were selected for microscopic examination from each hemisphere, after treatment with Marchi, sudan III, cresyl-echt-violet and Weigert staining methods, making forty sections of each brain, or 120 in the three cases. This report deals with the Marchi and sudan III reactions. Fat was found by far more frequently in the fourth and sixth layers —from 63 to 80 per cent.; the next most frequent location being the seventh zone—25 per cent. Fat was found in negligible amounts in the first, second and fifth layers. In the two cases with terminal infection there was a remarkable increase in fat in the third and seventh layers—from 53 to 65 per cent.—as against 7.5 per cent. in the third layers, and 25 per cent. in the seventh layer of the apyretic case. Higher temperatures apparently affect the third and seventh layers. The fat was found irregularly distributed in the cells, both in a general way, in the periphery. The nucleus was never displaced. In some instances the pigment was found bunched at one end or on one side of the cell, sometimes in the fundus, sometimes encroaching on the axon. In other instances, it was more evenly scattered about the periphery of the cell. It was found in the form of minute droplets of varying sizes. The droplets do not coalesce, but keep their spherical form even when closely packed at a given point. Fat was found more generally in the vessels of the cortex, but less frequently in the white matter. The fat was not found in droplets, but it seemed to coalesce and appeared in variously shaped and irregular masses, often at bifurcations or near branches, being irregularly distributed, some twigs being entirely fat free. This irregularity may be correlated with the peculiar anatomic structure of the cerebral vessels.

Peripheral Nerve Injuries.—The purpose of this paper is to place on record the methods used in caring for peripheral nerve cases in the American Red Cross Hospital No. 1, formerly the American Ambulance, and to report the results following nerve suture. There are available for statistical purposes 857 histories of peripheral nerve injuries, with the records of 205 reparative nerve operations, 151 of these having been followed during convalescence for at least six months after operation. An analysis of these records shows that the musculospiral was the nerve most frequently injured in war; the ulnar nerve was involved nearly as often. Following operation, the musculospiral and sciatic nerves make the best recoveries, the results in the case of the sciatic being equally as good as those of the musculospiral. The condition of an injured nerve, when examined by sight and touch at the time of operation, is invariably worse than the previous clinical findings would lead one to expect. When at the time of operation, having utilized all the methods to determine whether simple liberation or excision and suture is the best procedure, if doubt still exists, excise and suture. Repair of an injured nerve as early as possible should be the aim of every surgeon. For this reason the authors urge that in time of war neurologists should be stationed close to the front, so that the wounded may be examined for nerve lesions before going to the operating room. This, by increasing the number of primary nerve sutures, will unquestionably lead to a higher percentage of recoveries. Patients convalescing from nerve reparation should be encouraged to use the extremity affected because volitional effort plays a part in the return of the function. The more respect the surgeon shows nerve tissue when repairing an injury the better will be his results. The nerve should be stripped and handled as little as possible and the ends should be approximated so as to place in apposition corresponding fasciculi of the cut nerve.

War Neuroses as Physiologic Conservations.—This paper sets down in a permanent fashion the story of the effort made by the neuropsychiatric service of the A. E. F. to

meet and combat the war neuroses. It has to do with matters of organization and the development of a point of view. It is largely with the latter that Schwab feels that he is properly concerned. The observations were made in Base Hospital No. 117, which was the special hospital for war neuroses at La Fauche. Schwab was medical director of this hospital from its beginnng.

Arkansas Medical Society Journal, Little Rock

April, 1919. **15**, No. 11.

*Vincent's Angina of Penis. S. P. Bond, Little Rock.—p. 226.

Vincent's Angina of Penis.—Bond reports a case of ulcer at the mucocutaneous junction of the foreskin, which rapidly spread with the formaton of two more ulcers. There was marked edema, the ulcers had a grayish, sloughing bottom, ragged, irregular, undercut edges, with a foul discharge. Glandular enlargement was not present. A smear from the exudate of this lesion stained with Gram's stain, showed the fusiform bacillus, the thread-like organisms found in the so-called angina of Vincent, and the larger spirilla characteristic of the forms designated by Flügge as vibrios. Intercourse was admitted by the patient, saliva having been used as a lubricant.

Boston Medical and Surgical Journal

May 1, 1919, **180**, No. 18.

Year's Study of Maternity Ward at Boston City Hospital. B. L. Russell, Boston.—p. 487.
Roentgenography of Kidneys. A. E. O'Connell, Worcester,—p. 495.
Closure of Schools in Epidemic. W. H. Devine, Boston.—p. 498.
*Neurosyphilis: Special Points in Symptomatology and Course. A. Myerson, Boston.—p. 499.

Neurosyphilis. — Five cases are reported by Myerson because they represent somewhat unusual and yet rather important phases of neurosyphilis. The first case points out the importance of spinal puncture. The blood remained negative during many examinations while the spinal fluid was constantly positive. In the second case the Brown-Sequard syndrome appeared in almost classic purity. Moreover, the spinal fluid showed the xanthochromia syndrome. In the third case a mental disease apart from the neurosyphilis manifested itself almost as if the neurosyphilis were not present, while the neurosyphilis gave practically no symptoms. The fourth and fifth cases are important because they affect a brother and a sister. The brother, a paretic clinically, was treated and had a fine remission of clinical symptoms, but the spinal fluid was unchanged. The sister, presenting none of the signs of paresis, was treated for a long time for orthopedic symptoms. She presented in her spinal fluid the syndrome of paresis. Myerson emphasizes the fact that these cases form a group, which, though each is individual and unusual, is characteristic of neurosyphilis in the wide range of symptoms presented.

Journal of Experimental Medicine, Baltimore

May 1, 1919, **29**, No. 5

*Effect of Bile on Clotting Time of Blood. H. Haessler and M. G. Stebbins, New York.—p. 445.
Characteristic Localization of Bacillus Abortus in Bovine Fetal Membranes. T. Smith, Princeton.—p. 451.
*Results of Prophylactic Vaccination Against Pneumonia at Camp Wheeler. R. L. Cecil, New York, and H. F. Vaughan, S. C., U. S. Army.—p. 457.
*Action of Strophanthin on Living Cat's Heart. S. A. Levine, New York.—p. 485.
Functional and Pathologic Study of Chronic Nephropathy Induced in Dog by Uranium Nitrate. W. deB. MacNider, Chapel Hill, N. C.—p. 513.

Effect of Bile on Clotting Time of Blood.—This is a report of an investigation made by Haessler and Stebbins on whether or not bile or bile salts, present in the blood in jaundice, are in themselves capable of causing the increase in the coagulation time. They found that within certain limits clotting time depends on the percentage of bile present in solution and that the reaction is the same in experiments with pure solutions of the substances concerned in coagulation, as in whole plasma. Apparently bile and bile salts do not interfere with the formation of thrombin, since the prolongation of clotting time is just as great when preformed thrombin is added in ample quantity to fibrinogen solution, as when thrombin must be formed from its precursors in the presence of bile. It was found that there was a retardation of clotting, great enough to be detected by clinical methods, with amounts of bile greater than 5 per cent. The relation of bile pigments and bile salts in the blood in janudice has not been determined, but to the authors it would seem possible for the salt to be present in sufficient concentration to prevent clotting.

Prophylactic Vaccination Against Pneumonia at Camp Wheeler.—At Camp Wheeler 13,460 men, or about 80 per cent. of the entire camp strength, were vaccinated against pneumonia with pneumococcus lipovaccine. The dosage employed in all cases was 1 c.c. of the lipovaccine, containing approximately 10 billion each of Pneumococcus Types I, II and III. Both the local and general reactions produced by the vaccine were usually mild. Only 0.7 per cent. of those who received the vaccine were sufficiently affected to need hospital care. None of these men was seriously ill, and a majority of them returned to duty on the second or third day after admission. Most of the troops inoculated were under observation for two or three months after vaccination. During this period there were thirty-two cases of pneumococcus Type I, II and III pneumonia among the vaccinated four fifths of camp, and forty-two cases of pneumonia of these types among the unvaccinated one fifth of camp. However, if all cases of pneumonia that developed within one week after vaccination are excluded from the vaccinated group, there remain only eight cases of pneumonia produced by fixed types, and these were all secondary to severe attacks of influenza. There is no evidence whatever that pneumococcus vaccine predisposes the individual even temporarily toward either pneumococcus or streptococcus pneumonia. The weekly incidence rate for pneumonia (all types among the vaccinated troops was conspicuously lower than that for the unvaccinated troops. The pneumonia incidence rate per thousand men during the period of the experiment was twice as high for unvaccinated recruits, and nearly seven times as high for unvaccinated seasoned men as for seasoned men. Influenza causes a marked reduction in resistance to pneumonia even among vaccinated men. Of the 155 cases of pneumonia (all types) developing one week or more after vaccination, 133 were secondary to influenza. The death rate for 155 cases of pneumonia (all types) that developed among vaccinated men one week or more after vaccination was only 12.2 per cent., whereas the death rate for 327 cases of all types that occurred among unvaccinated troops was 22.3 per cent. The death rate for primary pneumonia among vaccinated troops was 11.9 per cent.; among unvaccinated troops it was 31.8 per cent., almost three times as great. On the other hand, the mortality rate in pneumonia secondary to influenza is about the same for the vaccinated and unvaccinated troops.

Action of Strophanthin on Heart.—In the experiments made by Levine, in which crystalline strophanthin was injected intravenously, the amount of the drug needed to produce toxic results as shown electrocardiographically was practically independent of the speed of administration. Injections of the drug were made at various speeds, with intervals of four or more days between experiments. The total amount required to produce the toxic effect did not vary significantly. A theory of the action of strophanthin is formulated by Levine which reconciles the conflicting views relating to the importance of concentration and of total amount of the drug. It supposes that the time required to produce a given effect in a heart varies inversely with the concentration of the active principle. The heart utilizes only a small portion (in the neighborhood of 10 per cent.) of the drug to which it is exposed, no matter what the concentration. A toxic effect results when the heart has taken up a certain total amount of the drug which is a definite small fraction of its own weight. If this theory is correct, it explains why in concentrated solutions the total amount is not important, for the small part that is taken out by the heart does not appreciably alter the concentration, while when very dilute solutions or small quantities are used the amount taken up by the heart diminishes the remaining concentration appreciably; that is, the "digitalis pressure" becomes lessened. In these experiments

the rapid injections forced an adequate amount of strophanthin into the heart rapidly and produced the toxic effect; in the slow injections the same total amount of drug was taken up by the heart, only more slowly. Levine claims that these experiments have an importance in clinical medicine. They suggest a method for intravenous medication with strophanthin designed to reduce the danger due to using the drug. After the ventricles have fibrillated, there is no constant way of reviving a heart. Occasionally, as in one experiment, resuscitation may take place after ventricular fibrillation and standstill by massage of the heart without opening the chest. No opinion is offered on the practical value of this method.

Kentucky Medical Journal, Bowling Green

May, 1919, **17**, No. 5.

*Hemorrhage in Common Nose and Throat Operations. S. G. Dabney, Louisville.—p. 204.
Newer Operations in Chest Surgery. L. Frank, Louisville.—p. 208.
Pellagra or Erythema Endemicum. J. C. McCreary, Eddyville.—p. 214.
Influenza Pneumonia Vaccine (Prophylactic) in Treatment of Pneumonia. J. F. Adams, Bagdad.—p. 217.
*Report of Influenza Treated with Serum from Recovered Cases. O. O. Miller and W. T. McConnell, Louisville.—p. 218.
Some Lessons Learned from Present Epidemic of Influenza. H. T. Crouch, Bardwell.—p. 219.
Surgery of Gall-Bladder. J. R. Wathen, Louisville.—p. 220.

Hemorrhage in Nose and Throat Operations.—Abstracted in THE JOURNAL, Oct. 5, 1918, p. 1166.

Influenza Treated with Serum from Recovered Cases.—Three cases of influenza, two complicated by pneumonia, were treated by Miller and McConnell with injections of serum obtained from persons convalescing from pneumonia. The results of this treatment lead the authors to believe that the injection of serum from recovered patients into desperately ill patients infected with the same organism is logical and is of some value.

Medical Record, New York

May 3, 1919, **95**, No. 18.

Etiology of Pneumonia: Autolyzed Lung Tissue Serum Treatment. F. B. Turck, New York.—p. 719.
Special Treatment That Should Be Given Milk Intended for Infant Feeding. J. M. W. Kitchen, East Orange, N. J.—p. 725.
Disequilibrium of Mind and Nerves in War. A. MacDonald, Washington.—p. 727.
Should Hypnotism Be Used to Correct Stammering? E. Tompkins, Pasadena, Cal.—p. 731.
Medical and Surgical Lessons of the War. War Wounds of Genito-Urinary Organs. G. Luys, Paris.—p. 734.

Military Surgeon, Washington, D. C.

May, 1919, **44**, No. 5.

*Aviation and Wounded in Sahara Desert. T. Tuffier, Paris.—p. 437.
Sanitation of Field Army. H. Zinsser, New York.—p. 445.
Lengthening of Stumps. F. J. Cotton, Boston.—p. 465.
Some Unprotected Routes of Infection. G. A. Soper.—p. 469.
Simple Method of Immobilization and Control of Plastic Skin Flaps to Penis. V. P. Diederich, Chicago.—p. 474.
Anatomic Changes in Respiratory Tract Initiated by Irritating Gases. M. C. Winternitz, New Haven, Conn.—p. 476.
Wound Shock. W. B. Cannon, Boston, Mass.—p. 494.
Sexual Infections in and out of British Army. J. B. Clark, New York.—p. 507.

Aviation and Wounded in Sahara Desert.—Reference to the subjects discussed in this paper have been made a number of times in the Paris Letter, covering practically the same ground.

Minnesota Medicine, St. Paul

May, 1919, **2**, No. 5.

Bismuth Paste Treatment of War Wounds. E. G. Beck, Chicago.—p. 157.
Fractures Considered as Potential Deformities. M. S. Henderson, Rochester, Minn.—p. 163.
Relation of Physician and Dentist in Treatment and Prevention of Disease Due to Dental Focal Infection. H. B. Clark, St. Paul.—p. 168.
Thyroid Deficiency: Iodin Requirement During Pregnancy. G. E. Smith, London, Canada.—p. 172.
Control of Venereal Diseases. E. C. Gager, St. Paul.—p. 173.
Trans-Rectus Incision in Upper Abdomen. R. E. Farr, Minneapolis.—p. 176.
Tuberculosis in Children: Its Prevention. W. D. Beadle, St. Paul.—p. 181.

New Orleans Medical and Surgical Journal

May, 1919, **71**, No. 11.

Blood Chemical Methods in Diagnosis and Prognosis. R. B. H. Gradwohl, St. Louis, Mo.—p. 456.
Delusion and Dream. Comment on "Freud Theory." S. T. Rucker, Memphis, Tenn.—p. 467.
Medical Experiences Overseas. J. B. Elliott, Jr., New Orleans.—p. 470. J. T. Halsey, New Orleans.—p. 473. J. W. Morris, Somerville, Tenn.—p. 474. I. I. Lemann, New Orleans.—p. 476.

New York Medical Journal, New York City

May 3, 1919, **109**, No. 18.

Early Recognition of Carcinoma of Stomach. J. B. Deaver, Philadelphia.—p. 749.
Diagnosis of Gastroduodenal Ulcer. A. Bassler, New York.—p. 751.
Medical Treatment of Gastric and Duodenal Ulcer. H. H. Roberts, White Sulphur Springs, W. Va.—p. 755.
*Unusual Case of Carcinoma of Esophagus. A. S. Hyman, Dorchester, Mass.—p. 759.
*Meningitis: Report of Cases. H. I. Goldstein, Camden, N. J.—p. 760.
*Influenza Pneumonia Treated by Blood Transfusion. F. B. Bogardus, Eureka, Mont.—p. 765.
Postinfluenzal Empyema. M. W. McDuffie, New York.—p. 766
Medication by Inhalation. P. D. Shultz, New York.—p. 768.
Secondary Suture and Skin Graft Under Local Anesthesia. J. A. Miller, New York.—p. 770.
*Studies in Epidemic Encephalitis (Epdemic Lethargic Encephalitis). I. Strauss, S. Hirshfeld, and L. Loewe, New York.—p. 772.
Prophylaxis and Treatment of Influenza. L. T. de M. Sajous, Philadelphia.—p. 773. To be Continued.

Carcinoma of Esophagus.—The following case reported by Hyman is interesting because the diagnosis was made only at the postmortem, although the carcinomatous process had involved the entire lower portion of the esophagus and the adjacent structures. A man, aged 58, in apparently good health entered the hospital for the relief of a large swelling in the right side of his neck which caused him no trouble, save that he was forced to wear larger collars than had been his custom. With the exception of the mass in his neck the physical findings were practically negative. Because of its acute onset, a tentative diagnosis of septic cervical adenitis was made, although the absence of pain and tenderness could not be accounted for. Malignancy was suggested, but examination of the the lips, gums, tongue, tonsils and oropharynx failed to reveal the site of any primary malignant disease. Roentgen-ray examination of the chest showed nothing remarkable in the lungs. Examination of a piece of tissue removed from the mass showed it to be cancer of the medullary type. Death ensued three months later. Postmortem examination disclosed tremendous involvement of the lower part of the esophagus and adjacent structures by a malignant growth which had not been recognized or even suspected previously, showing that an extensive pathologic process can occasionally involve the esophagus without that organ responding in its usual immediate fashion, and that unexplainable malignant disease of the right cervical glands may be secondary to "silent" esophageal carcinoma.

Meningitis.—Goldestin reports five rather interesting cases: one, a tuberculous meningitis occurring in an adult; the second, meningitis in a new-born infant; the third, epidemic cerebrospinal meningitis in a young child; the fourth, tuberculous meningitis in a 17-year-old boy; the fifth case, meningismus, or nonbacterial toxic meningitis, complicating otitis and bronchopneumonia in a 3½-year-old child, with a brief discussion of the symptoms and more important diagnostic and therapeutic features of meningitis in general.

Influenzal Pneumonia Treated by Blood Transfusion.—Citrated blood, taken from patients recently recovered from influenzal pneumonia, has been injected by Bogardus in six cases, and the results have been favorable. The author claims that the death of these two cannot be held against the method, however, as in one case it was not done until twelve hours before death, and in another case the patient was so far away from town that he could not be properly watched. In the four patients who recovered the results were immediate and certain.

Lethargic Encephalitis.—The authors report a series of experiments performed in an attempt to establish the etiology of epidemic lethargic encephalitis. Inoculation of emulsion of human brain produced lesions in the monkey characteristic

of the lesions found in epidemic lethargic encephalitis. The inoculation of the filtrate of the mucous membrane of the nasopharynx of a patient not suffering from epidemic lethargic encephalitis produced no evidence of disease in the monkey. The inoculation of the washings of the nasopharynx in a case of epidemic lethargic encephalitis produced paralysis in the monkey accompanied by pleocytosis in the spinal fluid. A filtrable virus obtained from the mucous membrane of the nasopharynx in a fatal case of epidemic lethargic encephalitis produced hemorrhagic encephalitis in the monkey. This virus has been carried through a second generation.

Oklahoma State Medical Assn. Journal, Muskogee

February, 1919, **12**, No. 2.

Pyelitis. J. H. Hays, Enid—p. 27.
What Simple Examining Cystoscope May Reveal to General Practitioner. F. K. Camp, Oklahoma City.—p. 32.
Quarter of a Century in Emergency Surgery. J. S. Fulton, Atoka—p. 37.
Modern Treatment of Burns. O. W. Rice, Alderson.—p. 40.
Use of Dictaphone in Case History in Hospital and Office. F. S. Clinton, Tulsa.—p. 42.
Diabetic Coma. L. A. Riely, Oklahoma City.—p. 43.
Case of Traumatic Infection Resulting from Influenza. M. H. Newman, Oklahoma City.—p. 45.

Public Health Journal, Toronto

April, 1919, **10**, No. 4.

Sanitary Conditions Aboard Transports. J. J. Heagerty, St. John, N. B.—p. 145.
Binghamton Health Center. C. J. Longstreet and S. J. Koerbel, Binghamton, N. Y.—p. 148.
Essentials of Adequate Investigation. M. E. McPhedran, Toronto.—p. 151.
Causes of Poverty. F. N. Stapleford, Toronto.—p. 157.
Sources of Information Regarding Family.—p. 161.
Reconstruction in Industrial Life.—S. Z. Batten, Philadelphia.—p. 166.

Social Hygiene, New York

April, 1919, **5**, No. 2.

Prohibition and Social Hygiene. R. A. Woods, Boston.—p. 137.
Illinois Social Hygiene League, Formerly Red League. R. H. Gault, Chicago.—p. 147.
Case Against Prophylaxis. E. H. Hooker.—p. 163.
Porto Rican Experiment. H. Goodman, New York.—p. 185.
Social Hygiene Sergeant. W. A. Bradley.—p. 193.
Experiences of a Lecturer. R. S. Yarros, Urbana, Ill.—p. 205.
Adequate Reproduction. R. H. Johnson, Pittsburgh.—p. 223.
Is Education Worth-While Factor in Control of Venereal Diseases? H. E. Kleinschmidt.—p. 227.
Vice Problem in Porto Rico. G. L. Payne, Indianapolis.—p. 233.

Southwest Journal of Medicine and Surgery, El Reno

April, 1919, **27**, No. 4.

After the War—What? B. L. Jenkins, Clarendon, Tex.—p. 73.
Postbellum Medical Problems. L. W. Cotton, Enid, Okla.—p. 79.

Surgery, Gynecology and Obstetrics, Chicago

May, 1919, **27**, No. 5.

*Pancreatic Lymphangitis. J. B. Deaver, Philadelphia.—p. 433.
*Practical Considerations with Regard to Permanent Colostomies. W. E. Sistrunk, Rochester, Minn.—p. 436.
*Treatment of Hodgkin's Disease. C. F. Burnam, Baltimore.—p. 440.
*Ectopic or Pelvic Kidney. E. S. Judd and S. W. Harrington, Rochester, Minn.—p. 446.
*Operative Treatment of Undescended or Maldescended Testis with Especial Reference to End-Results. W. B. Coley, New York.—p. 452.
*Prostatectomy, with Preparatory and Postoperative Treatment. B. Lewis, St. Louis.—p. 459.
*Polyposis of Stomach. D. C. Balfour, Rochester, Minn.—p. 465.
Rôle of Cystic Duct in Recurring Cholecystitis. J. E. Else, Portland, Ore.—p. 467.
*Two Signs in Chronic Appendicitis. R. T. Morris, New York.—p. 472.
*Congenital Diverticula of Intestines: Report of Case of Tumor Growing from Tip of Apparently Congenital Diverticulum in Lower Sigmoid Region. W. T. Black, Memphis, Tenn.—p. 473.
War Amputations. P. D. Wilson, Columbus, Ohio.—p. 478.
Syphilitic Induration of Vulva: Report of Four Cases. J. F. Gallagher, Nashville, Tenn.—p. 482.
*New Growths of Testis. C. R. O'Crowley and H. S. Martland, Newark, N. J.—p. 486.
*Radical Operations for Teratoma Testis: Report of Five Cases. F. Hinman, San Francisco.—p. 493.
Splenectomy in Diseases of Spleen: Four Cases. E. M. Prince, Birmingham, Ala.—p. 509.
*Gynecologic Pelvic Drainage. J. W. Bovée, Washington.—p. 514.
*Reconstruction of Uterus. C. R. Robins, Richmond, Va.—p. 516.
Use of Continued Extension by Means of New Extension Frame in Bloodless Reduction of Congenital Dislocation of Hip. J. W. Churchman, New Haven, Conn.—p. 518.
*Gauze Sponge Spontaneously Expelled from Urinary Bladder. G. P. LaRoque, Richmond, Va.—p. 522.

Pancreatic Lymphangitis.—Deaver emphasizes the importance of early surgical treatment of upper abdominal disease before a possible pancreatitis has time to get in its destructive work. Cases in support of this view are cited.

Permanent Colostomies.—Abstracted in THE JOURNAL, Jan. 18, 1919, p. 1219.

Treatment of Hodgkin's Disease.—Abstracted in THE JOURNAL, Jan. 18, 1919, p. 1220.

Ectopic or Pelvic Kidney.—Nineteen cases of ectopic kidney are recorded by Judd and Harrington. In nine of these, operations were done because of pathologic conditions in the misplaced kidney. In the remaining ten cases the condition was discovered either during the course of some other operation or in making a routine examination of the kidney. In these ten cases the kidney, while misplaced, was not producing any symptoms and apparently was functioning normally. When the ectopic kidney is pathologic, the symptoms are the same as when the condition is present in a normally placed kidney. The diagnosis depends on the physical findings, the roentgen ray and the kidney examinations. The differential diagnosis is more difficult in the female than in the male because of the frequency with which the ectopic kidney causes symptoms referable to the adnexa. The most common error in diagnosis in the male has been in differentiating between the dystopic kidney and inflammation in the appendix. From a surgical point of view the treatment of ectopic kidney differs in no essential from the treatment when the organ is in its normal position. The problems presented by the ectopic kidney during pregnancy and parturition are often difficult to decide, but fortunately most deliveries are accomplished without surgical intervention. The surgical treatment of pathologic conditions in the ectopic kidney is practically the same as for like conditions in normally placed organs.

Malignancy Following Operative Treatment of Undescended or Maldescended Testis.—The question of whether the traumatism incident to the operation on the undescended testis might not favor the development of malignant disease, Coley says, is one that should be considered, although at present it cannot be answered definitely. In none of the 415 cases in which operation was done at the Hospital for Ruptured and Crippled during the past twenty-nine years, has malignant disease been known to develop; however, Coley has observed one case of sarcoma of the testis in which the disease was either present at the time or developed shortly after the operation for undescended testis. The end-results in this case show that it is possible to cure the hernia in practically all cases. The result accomplished by the operation, the cure of the accompanying hernia, would seem to justify advocating operation for the undescended testis in adults.

Prostatectomy.—Abstracted in THE JOURNAL, Jan. 18, 1919, p. 1218.

Polyposis of Stomach.—Only one case of this kind has been seen at the Mayo Clinic in approximately 69,000 abdominal sections, 8,000 of which were for gastric lesions. A correct diagnosis was established before operation. From a study of this case, in conjunction with such cases described in the literature, it would appear that gastric polyposis has sufficient characteristics to be classified as a separate entity and should not be classified with single polyps or papillomatous masses (the latter usually malignant) occasionaly found in the stomach, and to which the term gastric polyposis has at times erroneously been applied. Balfour emphasizes that the condition would have been quite unsuspected had it not been for the roentgenogram and its interpretation. The age of the patient, 31 years, is unique because it is the earliest age at which the condition has been recognized.

Two Signs in Chronic Appendicitis.—Abstracted in THE JOURNAL, Jan. 25, 1919, p. 309.

Congenital Diverticula of Intestines.—Abstracted in THE JOURNAL, Jan. 18, 1919, p. 1219.

New Growths of Testis.—In considering tumors of the testis O'Crowley and Martland direct attention to the fact that nine times out of ten the tumor is malignant and that early diagnosis and radical treatment are of prime importance in order to prevent metastasis and consequent death. They report thirteen cases. Of these, seven patients are dead from metastases. The youngest patient was aged 5½ years, the oldest, 52 years. The longest duration of the disease was two years and seven months; the shortest, ten weeks. In six cases a definite history of trauma was given. In one case an undescended testis was the seat of the growth. Among 110,000 male patients admitted to a number of London hospitals during a period of twenty years there were sixty-five cases of malignant disease of the testis. Of fifty-seven cases with complete histories, nine were in ectopic testes. In 182,729 male admissions to general hospitals of New York City there were three cases of malignant growth of intra-abdominal testes, or about one in each 60,000 cases.

Radical Operations for Teratoma Testis.—Hinman emphasizes the relative simplicity and the real necessity of radical measures in these cases, and, by way of demonstration, reports five successful cases; four of the patients would certainly have died from metastases if simple castration alone had been performed, and in all of these the operative difficulties were not great and the postoperative complications insignificant. Hinman dissects the lymphatic tissues from off the iliac vessels and aortic bifurcation and the preaortic lymph areas and spermatic vessels. In every one of his cases there were masses of lymph tissues lying on the external and common iliacs as far up as the aortic bifurcation. This area had to be cleaned separately from the spermatic vessels. All five patients enjoy perfect health now nine months, seven and one-half months, four months, three months, two months and three years and six months, respectively, since operation. The finding in four cases of metastatic tumor demonstrates the uselessness of simple castration and the necessity of radical surgery.

Gynecologic Pelvic Drainage.—Abstracted in THE JOURNAL, Jan. 18, 1919, p. 1220.

Reconstruction of Uterus.—Abstracted in THE JOURNAL, Jan. 18, 1919, p. 1220.

Gauze Sponge Spontaneously Expelled from Bladder.—Abstracted in THE JOURNAL, Jan. 18, 1919, p. 1218.

Virginia Medical Monthly, Richmond

April, 1919, **45**, No. 1.

Myocardial Hydrothorax: Report of Case. A. G. Brown, Jr., Richmond.—p. 1.
*Preoperative and Postoperative Treatment of Neoplasms with Radium. A. M. Willis, and S. W. Budd, Richmond.—p. 5.
Quinin. W. T. Parrott, Kinston, N. C.—p. 7.
Pregnancy Following Hysterectomy. W. T. Griggs, Richmond.—p. 9.
Foreign Body, Shrapnel in Right Antrum, Removed. J. B. Green, Norfolk.—p. 9.

Treatment of Neoplasms with Radium.—Willis and Budd do not believe that radium will ever do as much for certain growths as surgery, but, at the same time, as a preliminary and as a follow-up treatment, much can be expected from it.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Dublin Journal of Medical Science

April, 1919, **147**, No. 568

Special Supports of Uterus. A. F. Dixon.—p. 149.
Five Hundred Operations from Gynecologic Department, Mercer's Hospital, Dublin. B. Solomons.—p. 154.
Major Operations in Private Practice. D. Hennessy.—p. 164.

Glasgow Medical Journal

April, 1919, **'91**, No. 4

Diagnostic Mechano-Therapeutics. E. F. Cyriax.—p. 193.
Cases Simulating Renal Calculus. D. Newman.—p. 204.
Influence of Respiration on Intra-Abdominal Pressure. G. H. Edington.—p. 215.

Medical Journal of Australia, Sydney

March 8, 1919, **1**, No. 10

*Syphilitic Factor in Insanity. W. A. T. Lind.—p. 187.
Toxic Syndrome. S. Pern.—p. 189.
Scopolamin and Morphin in Labor. A. G. H. Colquhoun.—p. 188.
*Nomenclature of Crucial Ligaments. G. A. Sampson.—p. 190.
Prevention of Pneumonic Influenza. N. W. Mackwill.—p. 190.

Syphilitic Factor in Insanity.—In Lind's opinion it would be absurd to claim that syphilis is the cause of every case of insanity, but it would be absurd to deny the alarming frequency of the combination of psychopathic inheritance and acquired or congenital syphilis. The age of the general paralytic (acquired) used to be somewhere about 49, but, judging by the postmortem examinations of the last few years, it seems to be gradually approaching 30. In other words, syphilis is acquired almost before the youth is mature. To Lind it looks as if the stone, bronze, and iron ages will be recognized by posterity as being followed by the syphilitic age. For the sake of the ignorant, he suggests the use of posters warning concerning venereal disease.

Nomenclature of Crucial Ligaments.—Sampson suggests that a more rational and more informative naming of the crucial ligaments is as follows: taken from the position of attachment of each ligament on, first, the proximal, and then the distal articulating bone: Posteroanterior (or longer) crucial ligament; posteroposterior (or shorter) crucial ligament, for both ligaments are attached proximally, each at its own separate area, at the posterior of the femur within the intercondyloid notch. The one runs downward, inward, and forward, to be attached to the tibia near the front of the joint, in front of the tibial spine, while the other runs downward, outward, and backward, to gain attachment at the hinder part of the tibia, close to the popliteal notch.

March 15, 1919, **1**, No. 11

*Present Epidemic of Influenza: Bacteriology. R. P. McMeekin.—p. 209.
Id. Complications. V. M. O'Grady.—p. 210.
Id. Symptomatology. W. S. Newton.—p. 211.
Admonitions Concerning Present Pandemic of Virulent Pneumonia. S. T. Knaggs.—p. 213.
*Gauze Mask: Some Experiments. R. F. Llewellyn.—p. 214.
Congenital Defects in Lower Bowel Recurring in Three Successive Children of One Family. A. S. Walker.—p. 216.

Bacteriology of Present Influenza Epidemic.—Bacteriologic examinations were made by McMeekin of thirteen smears and cultures of sputums, seven cultures taken from lungs postmortem, and twenty blood cultures. The predominating organisms found in sputums have been influenza bacilli, gram-positive diplococci resembling pneumococci and indistinguishable from them, and *Micrococcus catarrhalis*, all in large numbers. Coccal forms have also been present. Cultures taken from the lungs direct postmortem have shown influenza bacilli, pneumococci, *M. catarrhalis*, streptococci and staphylococci in a majority of cases. Of the twenty blood cultures examined, three showed *Staphylococcus albus*, probably a contamination, four showed tiny gram-negative bacilli morphologically indistinguishable from influenza bacilli, but showing cultural differences, while one showed Friedländer's bacillus.

Gauze Mask.—It has been suggested that the saturation of the inner layers of the mask for some hours by the moisture of the breath may tend to determine the majority of the bacilli caught in the mask to the inner layers thereof, and that if the mask be then allowed to become dry and be reapplied before death of the bacilli occurs, the wearer may get a sudden and large dose of them. Llewellyn therefore suggests that after the mask has been washed, sterilized and dried it be dipped in a weak solution of glycerol in water, say 5 per cent., and again hung up for some hours. All the water which the hygroscopic glycerol could not hold would then have evaporated, leaving the mask very slightly moist, while the antiseptic qualities of the glycerol would be unfavorable to the multiplication of the bacilli in the mask. A trace of thymoil might be added to the glycerol solution.

March 22, 1919, **1**, No. 12

Treatment of Urethral Stricture by Excision. R. H. Russell.—p. 231.
*Nature of Recent Australian Epidemics of Acute Encephalo-Myelitis: Successful Conveyance of Virus to Sheep, Calf and Horse. J. B. Cleland and A. W. Campbell.—p. 234.
Wandering Bullet. H. C. Colville.—p. 236.

April 5, 1919, 1, No. 14

Importance of De-Ionization in Treatment of Plumbism in Queensland Children. J. L. Gibson.—p. 272.
Some Recent Advances in Knowledge of Bilharziasis. N. H. Fairley. —p. 274. To be continued.

Recent Epidemics of Acute Encephalo-Myelitis.—This so-called "mysterious disease," which first made its appearance in New South Wales, Queensland and Victoria, and which was reported by several clinicians in 1917, is not the same as epidemic lethargic encephalitis, in the opinion of Cleland and Campbell. They believe that the acute encephalomyelitis under discussion is a distinct and hitherto unrecognized entity resembling ordinary infantile paralysis and at the same time histologically resembling hydrophobia. The disease is always present in sporadic form. Investigations carried out during 1918 by Cleland, Campbell and others seem to give strong support to the contention that the disease is a hitherto unrecognized entity. The points to which attention is specially directed by the authors are the following: There is no record of an epidemic of acute poliomyelitis in which signs of cerebral irritation have so strikingly dominated the clinical course, nor of one in which there has been such a high mortality rate (70 per cent.), nor of one in which such a large proportion of adults have fallen victims. Histologic examinations of the brain and spinal cord from sixteen human cases and from various experimentally infected animals have all shown lesions of a similar and, as regards distribution, distinct kind. The first and most important change is a thickening of the veins. The vein wall is surrounded by a collar or sheath or sleeve of cells which sometimes fills and distends the perivenous space. The vessels so affected may be found apparently in any part of the brain or spinal cord, though not necessarily in the same situation in all cases. Some vessels may be affected and others escape. In early cases most of these cells are indistinguishable from lymphocytes, though interspersed among them may be some cells of fixed connective tissue origin. Later the cells may show more protoplasm and an indented nucleus—a stage toward organization. In addition to these perivenous sheaths, there is intense congestion of all vessels and sometimes evidence of stasis. As secondary phenomena degeneration of nerve cells may occasionally be found, probably due to interference with their nutritive supply.

The disease in monkeys, of which the authors have had twenty examples under observation, seems not to agree with that described in these animals when infected with the virus of ordinary infantile paralysis. Altogether nineteen of the twenty monkeys showed varying degrees of incoordination, and thirteen, including twelve of the nineteen, exaggerated muscular movements or convulsions. On the other hand, fourteen monkeys showed paresis or paralysis, consisting of slight paresis of a limb in three, marked paresis in five and apparent paralysis of a limb or other part in six. In two monkeys ptosis was marked and in one it was slight. Two showed squint. In no instance was the disease ushered in by definite paresis or paralysis of a limb or set of muscles alone and in no instance was paresis or paralysis the dominant clinical feature. The virus of the Australian disease has been conveyed to thirteen sheep, a calf and a yearling foal. A histologic examination of the brains of these animals has shown the same pronounced perivenous cellular infiltration as was seen in the human cases and in monkeys.

National Medical Journal of China, Shanghai

March, 1919, 5, No. 1

Burning of Opium Stocks and Need of Constructive Efforts. W. Lien Teh.—p. 4.
Striped Hamster: New Laboratory Animal. E. T. Hsieh.—p. 20.
Medical History of Korea. O. R. Avison.—p. 24.
Influenza Including Its Infection Among Pigs. J. W. H. Chun.—p. 34.
Albuminuria of Pregnancy. W. E. Libby.—p. 44.
Modern Chinese Anatomist. J. Dudgeon.—p. 50.
Report of Hookworm Infection, Pinghsiang Colliery, Hunan. F. C. Yen.—p. 57. To be Continued.
College of Imperial Physicians in Peking. Wu Lien Teh.—p. 69.
Shanghai's Water Supply and Sanitary Problems Considered by Expert. G. J. Fowler.—p. 72.

Annales de Médecine, Paris

March, 1919, 5, No. 6

*Loose Bone Formation Around Joints with Paraplegia. Mme. Dejerine and A. Ceillier.—p. 497.
*Gastric Fever. G. Etienne—p. 536.
Varieties of Permanent Alteration of Visual Field After Brain Wounds in Occipital Region. M. Villaret and F. Beaulieu.—p. 556.
Uneven Pupils After Trephining. M. Landolt.—p. 566.
Influenza in France in 1918. Péhu and E. Ledoux.—p. 579.

Bone Growths Around Joints in Paraplegia.—Mme. Dejerine and Ceillier call attention to the resemblance between the hypertrophic type of tabetic joint affections and the joint affections with paraplegia from injury of the spinal cord. They found these *para-ostéo-arthropathies des paraplégiques* in 48.7 per cent. of seventy-eight cases of paralysis of the lower extremities, all but one from war wounds of the spinal cord. Their thirty-two illustrations and two other plates explain the trouble as the result of local edema, lowering the vitality of the connective tissue, in connection with the functional irritability of the intermediate grey column under the influence of toxic products. There is isolated bone production; the osteophytes lie separate from the skeletal bones, and these bones and the joint retain their normal outlines. Evidently various spinal diseases, syphilitic myelitis (as in one of their cases), tuberculous meningomyelitis, myelopathic muscular atrophy, and syringomyelia, as well as tabes, are liable to be complicated by development of these osteophytes. No inflammatory symptoms accompany them. They may develop around more than one joint, and the movements of the joint are not impaired. The men whose paraplegia was improving and who were able to use their legs more or less, never developed these osteophytes. If the paralytics with osteophytes were able to walk about, there might be fractures, etc., as with tabetic joint disease.

Gastric Fever.—Etienne relates that a fever of short duration with mild gastro-intestinal derangement, what he calls *embarras gastriques fébriles*, was comparatively common in the advanced infirmary in his charge. This febricula has been ascribed to indigestion, chilling, etc., but in seven typical cases he was able to cultivate typhoid or paratyphoid bacilli from the blood during a relapse. Agglutination was at 1:50 or 1:20. In other cases, other microbes were responsible. He only encountered one case in which the colon bacillus could be cultivated from the blood. This typhoidal gastric fever is not an attenuated form of typhoid fever; it is distinguished from the latter by the usual sudden onset, the lack of rose spots, and even of much depression and of diarrhea. It is an attenuated gastro-intestinal infection with a brief phase of septicemia, but liable to relapses and recurrences. Whatever the germ involved, this gastric fever or febricula ranks with catarrhal jaundice and toxi-infectious gastroenteritis.

Archives de Médecine des Enfants, Paris

April, 1919, 22, No. 4

*Serodiagnosis of Inherited Syphilis. H. Barbier.—p. 169.
Typhoid in Infants. J. Crespin and B. Saracino.—p. 183.

Serodiagnosis of Inherited Syphilis.—Barbier has been making a special study of atrophy in nurslings during the last fifteen years, and reports a positive Bordet-Wassermann reaction in 33 per cent. of ninety-three infants with atrophy. A number of others were certainly syphilitic, so that the proportion was at least 42 per cent. In 11 per cent. there was an unmistakable tuberculous taint. Atrophy from improper or inadequate feeding can be effectually combated by regulating the diet, but these inherited taints call for specific treatment besides. Some of the infants begin to thrive when mercury is given; others are unable to bear it. In any event, he warns that it should be given very cautiously, in minimal doses.

Archives Mens. d'Obstét. et de Gyn., Paris

Oct.-Dec. 1918, 7, No. 10-12. Pub'd March, 1919

*Double Solid Uterus. S. A. Gammeltoft.—p. 285.
Case of Congenital Tuberculosis. E. Chomé.—p. 294.
*Genital Prolapse. S. Mercadé.—p. 306.
Obstetrical Practices in Armenia. Ketenetjian.—p. 316.
Chimpanzee Born in Captivity in Cuba. L. Montané.—p. 323.

Double Solid Rudimentary Uterus.—Gammeltoft operated in the two cases he reports, and compares them with seven similar cases he has found in the literature. In three other cases on record the deformity was unilateral. In all but one of the total cases the women complained of abdominal pains at monthly intervals. The idea that the pains in these cases originated in the uterus is of recent date. Formerly the operation was done on the ovaries, but in the later cases the uterus was removed, leaving the ovaries if they seemed to be sound, and this is the logical and safest treatment.

Operative Treatment of Genital Prolapse.—Mercadé presents arguments to prove that the first degrees of genital prolapse are due to muscular degeneration of the anterior segments of the levator ani muscles. Hence treatment must be directed to overcome the effects of this degeneration. This can be done by suturing the two muscles together on the median line, leaving only room enough for the passage of the urethra. All his patients treated by this technic have been permanently cured. He cannot understand why others address their operative measures to the region at the back of the vagina, when the sagging of the bladder is always the first step in genital prolapse. He cuts out a large lozenge-shaped piece in the anterior wall of the vagina, and separates the bladder from the vagina and uterus, working with bistoury and fingers along the natural lines of cleavage. He does not tampon the vagina nor constipate the woman, but purges the third day, removing the threads the tenth day. Even a retention catheter was not needed in his cases, but he used the catheter the same evening and again the next day if necessary. In one case with an elongated cervix, 8 cm. long, he corrected the prolapse before amputating the cervix. Even if the uterus should have to be removed on account of the prolapse, he still would complete the operation with this suturing together of the levator muscles.

Bulletin de l'Académie de Médecine, Paris

March 11, 1919, **81**, No. 10

*Compulsory Notification of Tuberculosis. Committee Report.—p. 264.
*Respiratory Insufficiency and Large Ventricles. P. Merklen and Chuiton.—p. 280.
*Tubercle Bacillus and Oospora. A. Sartory.—p. 281.
*Accidental Falls in Permanently High Blood Pressure. H. Vaquez.—p. 283.
*Uneven Pupils in Syphilis. E. Sergent.—p. 284.
Instrumental Orthopedics. G. Bidou.—p. 286.

Compulsory Notification of Tuberculosis.—Summarized in Paris Letter, p. 1173.

Respiratory Insufficiency of the Apex.—Merklen and Chuiton warn that the diameters of the heart ventricles should be recorded as well as the lung findings in dubious cases. Moderate hypertrophy of a ventricle may reduce the respiratory capacity of the apex, and explain certain cases with dyspnea and pain in the chest after exertion, with lassitude and modified vesicular murmur. Examined from the rear, the findings are modified or disappear altogether.

Tubercle Bacilli and Acid-Resisting Oospora.—Sartory cultivated from the sputum or urine an acid-resisting oospora which deceptively simulated tubercle bacilli on fragmentation.

Accidental Decline in Blood Pressure with Permanent Hypertension.—Vaquez cites some instances of a temporary or permanent drop in the blood pressure with permanently high tension. The findings then are misleading if the previous state of the tension is not known. Typhoid fever, pneumonia and influenza often reduce the blood pressure. In one case of pneumonia the pressure fell from 240 to 160 mm. and never returned quite to its former figure. In the course of fulminating cerebral hemorrhage in one case the pressure dropped from 270 to 160 mm. Study of such cases apparently demonstrates that the hypertension is primary and independent, at least at first, of any organic lesion. It seems to be due to some functional disturbance in organs which regulate arterial pressure. The diseases which are most readily accompanied by a drop in blood pressure are the ones in which suprarenal insufficiency is common.

Uneven Pupils in Syphilitics.—Sergent warns that a pleuritic process at the apex is liable to modify the pupil in syphilitics.

Bulletins de la Société Médicale des Hôpitaux de Paris

Jan. 31, 1919, **43**, No. 4

*The Leukocytes in Influenza. G. Lion and A. Crétin.—p. 51.
*Pathology during the German Occupation of Lille. G. Lemoine.—p. 56.
Etiology of Influenza. J. Paraf and A. Goubault.—p. 63.
*Meningococcus Carriers. H. Stévenin.—p. 66.
Syphilitic Facial Paralysis. A. Thibault and E. Schulmann.—p. 68.
Gangrene of Scrotum from Anaerobic Infection. Id.—p. 70.
*Muscle Signs of Sciatica. Chiray and E. Roger.—p. 73.
Serin and Globulin Content of Normal and Syphilitic Serum. L. Bory and B. Guérithault.—p. 82.
*Fatal Arsenical Poisoning from Arsphenamin. L. Bory.—p. 84.
Uncomplicated Influenza. G. Blanc and J. Pignot.—p. 87.
Hospital for Tuberculous Soldiers in Heart of Paris. P. Claisse and Stettiner.—p. 92.
*Sudden Death in Football. R. Tricoire.—p. 98.

The Leukocytes in Influenza.—Lion and Crétin examined the blood in nineteen cases of influenza at the height of the October-November epidemic, and found a constant myelocythemia. This seemed to be the consequence of a primary localization of the agent causing the disease; it was found in the mild as well as the severe cases.

Conditions at Lille During the German Occupation.—Lemoine passed through the German occupation of Lille and was impressed by the modifications of the medical pathology of the region. Tuberculosis became very prevalent, and in 1917 there was an actual epidemic of glandular tuberculosis, mostly of the neck, but the sternum and ribs soon became involved, and tuberculous peritonitis became very prevalent. Lemoine is inclined to ascribe this epidemic of different forms of tuberculosis to the lack of mineral salts in the food, the deprivation of green vegetables and the poor quality of the scanty food in general. Scurvy prevailed at times, but the food commission succeeded in arresting it by obtaining lemons from Holland which were placed freely at the disposal of the populace. There were numerous cases also of peripheral neuritis, and cases of pellagra also developed. There were also two waves of dysentery, but no antidysentery serum was available; the Germans finally supplied a small amount. Every one lost weight during the German occupation; the loss of 20 to 25 kg. was the regular thing in adults. Nine tenths of the inhabitants did not eat any meat for two and a half years. The American food commission saved the population of the occupied region from completely disappearing, and they did all they could, with indefatigable zeal, to give the hungry people all in their power in the way of food, but their efforts, he says, were always *contrariés* by the German authority. The municipality also maintained a committee which bought in Holland all the Germans would allow it to buy. The efforts of the two commissions were unable to provide ever more than 1,450 calories for the average daily ration, according to scientific estimates.

Meningococcus Carriers.—Stévenin relates that in making 652 examinations for carriers in a meningitis environment, 11 per cent. of the men were found to be carriers. Also 12 per cent. carriers were found in 2,844 examinations in environments quite free from meningitis, and 7 per cent. in 333 examinations of groups of about twenty men from scattered environments. Not one of the healthy carriers was known to have transmitted the disease although they were kept under supervision for months.

Atrophy, etc., of the Muscles with Sciatica.—Chiray and Roger refer to the atrophy, the exaggeration of the idiomuscular contraction and the electric contractility which are liable to be encountered with sciatica. This *syndrome musculaire de la sciatique* is extremely variable, which is remarkable when we consider the uniformity of the sensory disturbance. This indicates that the seat of the mischief is at the point where the the motor and sensory fibers run separate, that is, at the roots. It has been found further that in more than half the cases the cerebrospinal fluid has a high albumin content, with lymphocytosis and sometimes a positive Wassermann reaction. All this testifies to some inflammatory reaction in the meninges preceding or following the inflammation of the roots, as the cause of sciatica in the majority of cases. The muscular anomalies form an integrant part of sciatic neuritis and sciatic neuralgia, which differ only in degree.

Fatalities from Arsphenamin.—Bory reports a case of typical arsenical eclampsia developing the fourth day after the fourth injection of French arsphenamin, with an epileptiform attack, coma with mydriasis, stertor and death. Two similar cases have occurred recently at the center at Troyes in the last six months, and he cites ten other fatalities of the same nature which he has found recorded in recent reports from different centers.

Sudden Death in Football.—The only pathologic finding at necropsy was dilatation of the macroscopically sound heart, and the large thymus. The man of 22 fell suddenly stricken, like the Marathon runner.

Journal de Médecine de Bordeaux

April 10, 1919, **90**, No. 7

Epithelioma on Site of Old Traumatic Osteitis of Tibia. L. Verdelet. —p. 127.
Parotitis. H. Mallié.—p. 128.
Importance of Coprology for Practitioner and Surgeon. D. Dargein. —p. 130.
Impressions of French Medical Mission in Russia. P. Piétri.—p. 133.

Presse Médicale, Paris

March 24, 1919, **27**, No. 17

*Dulness in the Axilla with Disease in the Pleura. G. Mouriquand. —p. 149.
*Chronic Intestinal Stasis. V. Pauchet.—p. 151.
Recent Experimental Research on Lymphocytosis and the Roentgen Rays in connection with Cancer. J. Luzoir.—p. 152.
Abortive Phenol Treatment of Furuncles. A. L. Soresi.—p. 154.

Dulness in the Axilla.—Mouriquand gives illustrations to show the characteristic information to be derived from percussion and auscultation of the axilla in pleurisy and pneumonia as well as in chronic processes in pleura or lungs. In over a thousand cases examined, when there was accompanying posterior dulness in the chest, dulness in the axilla in at least 75 per cent. of the acute and subacute cases was explained by the presence of an effusion. When the dulness was below the axilla, this was the finding in about 50 per cent. of the cases. Dulness in or just below the axilla should therefore turn the scale in favor of exploratory puncture, thus permitting an early cure.

Pathogenesis of Chronic Intestinal Stasis.—Pauchet refers to Arbuthnot Lane's clinical picture of chronic stasis. He declares that the roentgen and operative findings in such cases show that it can be explained by physiologic and mechanical factors, alone or together. The vicious functioning probably precedes the kinks or partial strangulation, and in the functional cases, without permanent constricting bands, it may be possible to correct conditions by physical culture, massage, the rational use of purgatives and possibly organotherapy, although he asks parenthetically "Which?" When the intestine has had to be short circuited, the results to date have been very encouraging. In conclusion Pauchet warns that we must not be in too much of a hurry to diagnose chronic appendicitis, adnexitis or gallbladder mischief, enteritis, latent tuberculosis or neurasthenia when confronted with a case of general autointoxication or dyspeptic or other abdominal phenomena. We should examine the patient with the roentgen rays every twelve or twenty-four hours until the bismuth suspension has passed entirely out of the small intestine, the cecum, the colons and the rectum. Any delay in the passage of the feces should be carefully noted. One radioscopy is not enough; three or four radioscopic examinations are necessary to diagnose correctly chronic intestinal stasis.

March 27, 1919, **27**, No. 18

*Lamblia Enteritis. M. Labbé.—p. 161.
Parallel Between Puerperal and Surgical Infections. V. Wallich.—p. 162.
*Exophthalmic Goiter and Ovarian Insufficiency. A. Tilmant.—p. 164.

Lambliosis.—Labbé reports experiences which confirm that the lamblia is capable of inducing grave and rebellious intestinal disturbances. The chronic enterocolitis is not in itself very severe, but the general health suffers profoundly and tuberculosis may be suspected. The onset is usually insidious, and the lambliosis is harder to cure than amebiasis. Emetin, arsphenamin, none of the drugs tried displayed any efficacy.

Exophthalmic Goiter and Ovarian Insufficiency.—Tilmant describes a family in which of the 17 members, 57 per cent. of the 7 men and 70 per cent. of the 10 women have goiters. In 6 of the women symptoms of exophthalmic goiter developed as the menopause became installed or the ovaries became insufficient from other cause. In all of the women the goiter subsided temporarily during their pregnancies. One of the sons, who had a goiter, married his cousin who already showed signs of hyperthyroidism, and their three daughters have developed exophthalmic goiter but their three sons seem to be sound.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 15, 1919, **49**, No. 11

*Cesarean Section for Hemorrhage. K. Brunner.—p. 321.
*Epilepsy. M. Tramer.—p. 328. Conc'n.

Cesarean Section for Hemorrhage from Vaginal Varices.—Brunner cites statistics which show that hemorrhage from varices in the vagina very often proves fatal: 13 deaths in Wullmer's 15 cases during the pregnancy; 7 in 16 during parturition; Delahousse's compilation of 11 deaths in 30 cases, and Guerdjikoff's 2 deaths in 3 cases. Brunet in a case of bleeding from multiple varices was able to arrest the bleeding by tamponing, but the moment the pressure was removed the blood spurted anew from several points. He delivered the woman by abdominal cesarean section and the varices collapsed by the third day. Brunner reports here a case that resembled this only that the profuse and persistent bleeding came on during delivery, which was impeded by the large size of the child, 4,900 gm. The labia were so edematous and swollen that the ligatures applied pulled out, and the hemorrhage was controlled only by numerous clamps filling the vagina. The woman recovered after abdominal cesarean section and antistreptococcus serotherapy.

Epilepsy.—Tramer compares the clinical course with the necropsy findings in fifty epileptics, expatiating on the anatomic changes in the brain which suggest an explanation for the seizures. He thinks that the marginal gliosis (*Randgliose*) so often encountered comes under this heading, but only when there is another factor superposed, namely, pathologically increased pressure on the brain of longer or shorter duration. Hence the necessity for combating the seizures to ward off the consequent stimulation to further production of the gliosis. In some of the epileptics marked changes were found in the Betz' cells in the central convolution, and the clinical course in these cases had been more of a spastic paresis type. Other anatomic findings seemed to correspond to the cases of a myoclonus or paramyoclonus type. The prognosis with epilepsy depends on whether the psychic or psychopathologic condition is secondary to the epilepsy or merely combined with it. Epileptic secondary dementia is characterized by impairment of the memory, retarding of mental and physical processes of association, and intense emotional instability.

March 22, 1919, **49**, No. 12

*Hernia in Appendicectomy Scar. P. F. Nigst.—p. 353.
*Chenopodium Poisoning. P. Ryhiner.—p. 360.
*Otitis in Influenza. Farner.—p. 365.

Hernia in Appendicectomy Scar.—Nigst had hernia develop in fourteen of 117 drained appendicectomies. The tendency to hernia seems to be less with the McBurney technic and when the lips of the wound were sutured with absorbable material in tiers, close up to the drain tube. He warns expressly against parallel incisions, which are necessary when the incision is too close to Poupart's ligament. In dubious cases it is better to drain than not, as these cases heal with less tendency to hernia.

Chenopodium Poisoning.—Ryhiner reports three cases of serious chenopodium poisoning encountered in the last three years, two of them terminating fatally. The patients were children between 2 and 7; the one that recovered was a girl of 2½. This latter child was given 5 drops of chenopodium oil three times, with an hour interval and, two hours after the last dose, a tablespoonful of castor oil. The whole was repeated the second day, and sixteen ascarides were passed within four days. As the child still complained of abdominal pain, the vermifuge was given again a week later; two doses

of 8 drops with two tablespoonfuls of castor oil were given on two following days. Three days later the symptoms of severe poisoning developed suddenly and it was over a week before the child recovered. In one of the fatal cases the dose had been three times 10 drops of chenopodium oil with one hour interval, followed by not quite 1 gm. castor oil. The child vomited an hour later. The next day the course was repeated but there was no stool or urine and the child died the following morning. The third case was the druggist's mistake, 5 gm. doses being dispensed instead of the 5 drops ordered. Ryhiner emphasizes that chenopodium oil is an excellent vermifuge but the doses usually given are needlessly high. His own practice is to give two doses of as many drops as the child is years old, with an hour interval, following in two hours with a purge. If this does not work in two hours he repeats the purge. Vigorous purging is indispensable. The manifestations of the poisoning are somnolency, passing into profound coma, clonic convulsions and facial paralysis on one side, screaming, horizontal nystagmus, loss of reflex action, and death from arrest of respiration.

Otitis in Influenza.—Farner reports 115 cases of influenza otitis. They formed about 3.5 per cent. of the cases of influenza at one emergency hospital at Zurich.

Deutsche medizinische Wochenschrift, Berlin

Jan. 16, 1919, 45, No. 3

*Preventive Vaccination Against Typhus. Otto and Rothacker.—p. 57.
*Recent Progress in Study of Malaria. M. Mayer.—p. 59.
*Urobilinogen with Gastric Cancer and Anemia. H. Scholz.—p. 62.
*Nutritional Disturbances in the Myocardium. T. Büdingen.—p. 64.
Influenza. G. Hoppe-Seyler.—p. 67.
Apparatus for Artificial Pneumothorax. K. Henius.—p. 69.
*Biologic Treatment of Ozena. K. Wittmaack.—p. 70.
Latent Infection. A. Loeser.—p. 72.
*Tuberculin in Diagnosis. H. Bergmann.—p. 73.
Turpentine in Treatment of Gonorrhea. Pürckhauer.—p. 74.
*Etiology of Rheumatic Iritis. M. Folman.—p. 75.
Treatment of Phlegmons with Tincture of Iodin. W. Feilchenfeld. —p. 76.
Hot Water Splint for Sciatica. A. Sasse.—p. 76.
*A State Medical Service. Kollwitz.—p. 77; Comment, J. Schwalbe. —p. 78.

Vaccination Against Typhus.—Otto has been testing a vaccine against typhus since April, 1917, and has vaccinated 750 persons. The vaccine was prepared from the blood of typhus patients at the height of the disease or early in convalescence. It seemed to be perfectly harmless but did not protect against the infection. However, the disease ran a decidedly milder course in the vaccinated than in others.

Malaria.—Among the lessons learned from the war experiences, Mayer remarks, is that the normal incubation period with malaria is ten or twelve days, but it may be much longer. He has seen it up to a year and a half. Malaria is a chronic disease with a tendency to relapses under any treatment. In some years, however, it seems to become spontaneously extinct but otherwise lasts one, two or three years. As a rule, 1 gm. may be accepted as the minimal daily dose. The prolonged use of quinin may induce symptoms of toxic action, eruptions, eczema and diffuse edema, sometimes with hemorrhages in skin and mucosa and even severe intestinal hemorrhage. Blackwater fever is still a mystery; in one case it was brought on by roentgen exposures of the spleen. Provocative procedures interfere with the self-healing processes, he says, and should be restricted to latent cases. As anopheles abound in Germany, infection has already occurred at numerous points and it is important to have the men with a history of malaria kept under supervision in their home towns.

Urobilinogen in Differential Diagnosis.—Scholz regards the amount of urobilinogen in stools and urine as an index of the destruction of the blood that is going on. It can be determined by the colorimeter or by a spectrophotometric technic. Salomon and Charmass have recently asserted that with pernicious anemia the content of urobilinogen in the stools is two or three times the normal amount, while with gastritis, gastric or bowel cancer the content is only a half or a third of the normal figure. Scholz found in thirteen gastric cancer cases that in eleven the content was materially reduced, confirming their statements, but in the two other cases the findings were conflicting. The findings in his three cases of pernicious anemia were also conflicting. The urine findings also proved undependable, even with metastasis in the liver.

Nutritional Disturbances in the Myocardium.—Büdingen recalls that experiments on the surviving heart have shown that sugar in the blood is the main nutriment and source of energy for the heart muscle. His own research has demonstrated further that a deficit in the blood sugar is liable to entail serious disturbance in the growth and actual functioning of the myocardium, a hypoglycemic cardiodystrophy. This result of absolute or relative hypoglycemia may accompany heart disease. The clinical manifestations are a sensation of oppression or pain in the heart region, with or without radiating pains, these disturbances coming on with or increased by exercise, the only objective findings being sometimes faint sounds at the base. In the elderly it is impossible to distinguish the findings with hypoglycemia from coronary sclerosis. The blood sugar content threw light on three otherwise inexplicable cases of sudden death with heart of normal size, the patients' complaints having been ascribed to hysteria or neurasthenia by the physician. When digitalis acts effectually, this hypoglycemic cardiodystrophy can be excluded. But when the usual remedies fail, and the sugar content of the blood has dropped low and disturbances are noted while the sounds at the base grow fainter, then the system is clamoring for grape sugar, and when this is supplied, all returns to normal once more. Sugar given by the mouth is not reliable for the purpose; he infuses a highly concentrated solution of grape sugar, requiring the patient in serious cases to stay in bed. He never attempts the infusion in the office or home. In his over 5,000 infusions by the vein he has never seen any lasting harm result, while his observation of the results has convinced him that we might be able by this measure, taken in time, to overcome or ward off toxic-infectious injury of the heart. Of course coronary sclerosis is irreparable, but the fatal termination is generally due to intercurrent functional factors, and these we may be able to keep under control by therapeutic action on the disturbed internal workings of the heart. In hundreds of cases, he has witnessed permanent benefit, essential improvement in the general physical capacity and in the heart capacity, with relief from disturbances and from the need of drugs, even in advanced cases of coronary sclerosis, with this hypoglycemic cardiodystrophy. Even without this latter, convalescents from infectious diseases with extrasystoles, etc., benefited by the sugar treatment. He usually begins with a 10 per cent. solution and increases the concentration as he proceeds, and gives two or at most three infusions during the week, except in pneumonia or septic fever when a daily infusion may be called for. He usually infuses about 200 c.c. of a 10 or 20 per cent. solution of grape sugar. Bang has demonstrated that 90 or 95 per cent. of the infused sugar vanishes almost instantaneously from the circulation; it is evidently taken up greedily at once by the heart, liver and muscles. Büdingen has been preaching this "sugar treatment" of the heart since 1913 as THE JOURNAL mentioned then.

Biologic Treatment of Ozena.—Wittmaack ascribes ozena to the lack of the normal ciliary movements which have been lost by some inflammatory process and consequently the physiologic cleansing mechanism has been destroyed. To remedy this, he diverted the outlet of the parotid gland into the maxillary sinus so that the saliva passed from this sinus into the nose, thus laving the nasal mucosa constantly. As soon as this occurs, the ozena begins to subside without any other treatment and is soon completely cured. The operation begins with the Caldwell-Luc radical operation on the maxillary sinus, and with bilateral ozena has to be done on both sides. In his latest case he did it all at one sitting under local anesthesia. The interval since in his first case is now eight months, and the cure has been complete and permanent. The drawback to the method is that during chewing the flow of saliva is so profuse that some may drip from the nose. The patient has to choose between this and his ozena, and all his five patients have been more than satisfied with the outcome, especially as the secretion of saliva seems to grow

less with time. The ozena in each case had resisted all kinds of treatment for years.

Tuberculin in Diagnosis.—Bergmann argues that it is possible with the tuberculin test to distinguish between inactive tuberculosis which is on the point of flaring up and tuberculosis which is slumbering. For example, a man with indecisive lung findings has slight fever. If the titrated skin tuberculin reaction is positive, then he had better be kept under close observation. If it is negative, then the fever must be due to other causes.

The So-Called Rheumatic Iritis.—Folman regards it as significant that in 47 per cent. of his ninety-three cases of supposed rheumatic iritis, there was a history of gonorrhea, and probably the proportion was still higher in reality. This suggests possible advantage from antigonococcus vaccine in treatment of severe and recurring cases of iritis.

The Medical Profession in the Service of the State.—Kollwitz is a "sozialdemokrat" and this address was delivered at a meeting of the Verein sozialdemokratischer Aerzte at Berlin. He comments on the anomalous position of physicians in our present civilization, saying "This anomalous position has been a brake on the wheels of progress of social hygiene. An actual universal hygienization of a people requires as its first prerequisite that the practice of medicine should become a state service." His plan is that physicians are to be given the choice of private practice or of entering the service of the state. The state physicians would have the eight hour day, and an office building would be supplied by the state, like the postoffice and school buildings, where physicians and specialists would serve in turn in three day and night shifts, with provision for bedside calls. . . . "The confidence which the sick man feels in his special physician would soon come to include the entire unit in the community office building, when he found that he was being cured." Schwalbe comments on this, as follows: "Sozialdemokratie is supposed to be the most radical champion of freedom, but in reality it is exactly the reverse. In no other political system would the individuality be so restricted, and initiative so crushed out. With the physician serving only an eight hour day, if a patient seen early in the day grew worse toward night, he would have to have another physician call on him. The state employed physician would have no independence; once embarked on this current he could not go back." Kollwitz expressed his conviction that a socialistic society would treat the medical profession with more consideration and justice than it has been accorded hitherto, but Schwalbe comments that experiences with the sickness insurance societies, which are sozialdemokratisch, show that exactly the reverse may be anticipated.

Jan. 23, 1919, **45**, No. 4

*Sinusitis in Influenza. E. Fraenkel.—p. 89.
Influenza Epidemic. A. Hoffmann and E. Keuper.—p. 91.
Factitious Neurotic and Psychotic Conditions. A. H. Hübner.—p. 95.
To Avoid Reamputation. C. Pochhammer.—p. 97.
*Acute Nephritis without Albuminuria. H. Davidsohn.—p. 98.
Examination of Urine Sediment. H. Egyedi.—p. 100.
Rapid Stain for Malaria Parasites. G. Bruckner.—p. 101.
Retention Stomach Tube in Successful Treatment of Fresh Caustic Injury of Esophagus in Child of Four. F. Bonhoff.—p. 102.
*Roentgen Treatment of Jacksonian Epilepsy. O. Strauss.—p. 103.

Sinusitis with Influenza.—Fraenkel remarks that the publications on the brief wave of influenza in July and the furious flood in October and November all coincide in the main particulars, but he has not happened to see any account of sinusitis. Among 400 influenza cadavers, he sought in sixty for evidences of disease in the accessory nasal cavities, and in these sixty cadavers the sinuses were found pathologic in 75 per cent. He does not know of any other acute infectious disease that involves the sinuses to such an extent. In 146 other cadavers he found evidences of sinusitis in less than 50 per cent.

Acute Nephritis Without Albuminuria.—Davidsohn describes in detail three cases in which a focal glomerular nephritis was accompanied by quantities of formed elements in the urine but no or slight and transient albuminuria. Oliguria was constant but never very pronounced. In two of his cases hematuria for three or four days was the first symptom, and one patient had colic-like pains. As every acute nephritis may run into a chronic form unless it gets proper treatment, the importance is obvious of not overlooking the nephritis in cases of this kind without albuminuria.

Radiotherapy in Epilepsy.—Strauss reported in 1913 that he had succeeded in improving conditions in epileptics by roentgen exposures. The war interrupted this work, but he has recently resumed it, and now reports a remarkable case of improvement under this treatment. The young woman had had severe epileptic seizures on the right side and both sides of the face, with frequent loss of consciousness, since the age of 3. At 11, the cramp center for the right arm was excised. After this the arm was paralyzed but the seizures were milder and less frequent for a time. At 22 she was having seizures daily, and Strauss applied four erythem doses of hard filtered roentgen rays in four sittings at four weeks' intervals. The region exposed was the left fissure of Rolando. Since then the girl has had no severe seizures, merely occational slight clonic contractions which are growing less frequent. Strauss believes that the removal of the cramp center was the actual cause of the improvement, but the operation had to be reinforced with the roentgen rays before its full effect could be realized. He adds that his success in this case justifies experiments in this line with epilepsy following war wounds of the skull.

Schweizer Archiv f. Neurol. und Psychiatrie, Zurich

1918, **3**, No. 2

The Inaptitude for Neuralgia in the Last Five Sacral Roots. C. Odier.—p. 185. In French.
Musical and Transcortical Aphasia. G. Mingazzini.—p. 210. In Italian.
Results of Direct Application of Curare to Different Parts of the Cerebellum. L. Stern and E. Rothlin.—p. 234. In French.
Transitions between Drawing and Writing in the Insane. W. Morgenthaler.—p. 255. In German.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 13, 1919, **40**, No. 21

Case of Branchiogenous Carcinoma. N. La Forgia.—p. 161.

March 16, 1919, **40**, No. 22

Malaria in Istria during the War. M. Gioseffi.—p. 169.
Complications of Penetrating Wounds of the Chest. G. Pisanò.—p. 171.

March 20, 1919, **40**, No. 23

Empyema Complicating Influenza. U. Savaral.—p. 185.

Pediatria, Naples

April, 1919, **27**, No. 4

*Transmission of Smallpox to Fetus. S. Cappellani.—p. 193.
*Congenital Osteosclerosis. G. Di Giorgio.—p. 198.
Study of the Fats in the Stools of Twenty-Three Infants. L. Maccone.—p. 202.

Transmission of Smallpox to Fetus.—Cappellani reports four cases in which the new-born infant developed smallpox showing that it had evidently been infected before birth, while the mother was merely in the phase of incubation. The infants seemed normal at birth, but developed the symptoms of smallpox in five or six days. In another case the mother was healthy but the infant showed fever twenty-four hours after birth, and the next day unmistakable signs of smallpox followed. The mother was revaccinated at once and gave a typical response but showed no signs of smallpox at any time, although smallpox was known in the quarter at the time.

Congenital Osteosclerosis.—Di Giorgio gives illustrations of a girl of 6 and brother of 3 who both present complete ankylosis of both elbows, flexed at a right angle. The father is a man of 70, the paternal uncle of the wife, who was only 15. The Wassermann reaction in mother and children is negative. The deformity is evidently the result of symmetrical chondrodystrophy.

Policlinico, Rome

March 30, 1919, **26**, No. 13

*Cancer of the Breast. G. Egidi.—p. 385.
*Determination of Phosphates. E. Pittarelli.—p. 402.

Mammary Cancer.—Egidi recapitulates the important points to be heeded in amputation of the breast, and gives an illustrated description of Tansini's method for twisting around a

flap from the back to repair the gap. Egidi warns that palpation of the tumor must always be done very gently as otherwise cancer cells may be forced into the circulation.

Technic for Determination of the Phosphates.—Pittarelli extols the advantages of his modification of the Mercier-Huppert uranium salts method for determination of the phosphates, and he points out the errors liable with the carmin technic.

Riforma Medica, Naples

March 15, 1919, **35**, No. 11

Draining After Laparotomies. D. Giordano.—p. 206.
Relations Between the Graver Forms of Influenza and Experimental Hypersensitiveness to the Streptococcus Pandemicus. M. Segale. —p. 211.
The Methylene Blue Reaction in Influenza Urine. S. Aradas.—p. 213.
Recent Progress in Chronic Nephritis. G. Moscati.—p. 214.
Osteitis of the Apex of the Petrous Bone. E. Aievoli.—p. 216.

Rivista Critica di Clinica Medica, Florence

March 1, 1919, **20**, No. 9

Epidemiology of Influenza. L. Siciliano.—p. 97.

Anales de la Facultad de Medicina, Montevideo

September and October, 1918, **3**, No. 8-10

*Intestinal Trichomonosis. E. Escomel.—p. 521.
*Coronary Embolism in Infectious Endocarditis. R. Lutembacher.—p. 591.
Conception of Traumatism from Medicolegal Standpoint. S. C. Rossi. —p. 611.
*Iodized Vaccine Therapy of Typhoid in Children. L. Morquio and V. Zerbino.—p. 620.
*Suprarenal Insufficiency in Typhoid. P. E. Nuñez.—p. 648.
*Walled Off Otitis Media. G. Regules.—p. 654.
*Albumin in Cerebrospinal Fluid. A. Prunell.—p. 660.
*Protozoa in Fresh Waters in Uruguay. E. H. Cordero.—p. 668.

Intestinal Trichomonosis.—Escomel's research has confirmed that the trichomonas forms cysts, and that it is liable to induce processes in the liver like amebic hepatitis. Intestinal trichomonosis may assume the form of simple diarrhea or dysentery or both, or a choleriform disease. It may be acute or chronic from the start, or chronic with intermittent acute forms. It may induce inflammation and ulceration from the rectum onward, decreasing in intensity upward. Microscopic examination of fresh feces disclosing the trichomonas may reveal other helminths which should also be expelled. Infection occurs by flies or other insects or from water, possibly from water used on vegetables and fruits. He says that since he demonstrated in 1910 the destructive action in vitro of turpentine on the trichomonas, and applied it in clinical cases, trichomonosis has become an easily curable affection. Under turpentine treatment, he has seen dysentery, intractable for months, subside promptly in two weeks, while three days completed the cure in the recent cases. The urine should be inspected to detect any tendency to drug nephritis. Even if this develops, it is mild and transient, and is extremely rare in the absence of a special predisposition. He starts with a course of iodin treatment. Each night the patient takes an enema of a liter of decoction of krameria or plain boiled water, expelling it at once. Then a second enema is given of 1 liter of spring water in which is dissolved 1 gm. of sublimed iodin, and this enema is also expelled at once. The enema should be given with the patient reclining in bed, lying on the left side. There is some discomfort from the iodin enema but this soon subsides; it can be relieved by hot applications to the abdomen and anus, or a small enema with some sedative may be given and retained. The iodin enema is usually borne well; it is never so painful as a silver nitrate enema. The food should be milk and carbohydrates or the latter exclusively, drinking copiously of rice water, decoctions of acacia and of linseed. Hot applications should be made to the abdomen every two, three or four hours. Repose is useful. The results have been notable in his extensive experience. If any trichomonas are still found in the stools by the fourth day, this indicates that the protozoa have invaded very high regions or are ensconced deep. In this case he institutes a course of turpentine by the mouth or in enemas, alternating the three procedures until the trichomonas and their cysts have completely disappeared. Escomel gives the illustrated history of the biology of the trichomonas and reviews what has been written on the subject by others, with details of the turpentine technic.

Coronary Embolism in Heart Disease.—Lutembacher describes a variety of infectious endocarditis in which the cardiac thrombi are made up almost exclusively of leukocytes, with very little fibrin. As they contain few microbes, they do not induce an inflammatory reaction, but in the skin they may determine a purpuric eruption. His sixteen illustrations are from a case in which the roentgen findings during life were compared with the necropsy findings, an infectious endocarditis having become superposed on an old mitral stenosis.

Iodized Vaccine in Typhoid in Children.—Morquio and Zerbino report disappointing results in treatment of seventy-seven children treated with iodized vaccine made by Ranque and Senez' technic. The vaccine seemed harmless, but no benefit from it was observed.

The Suprarenals in Typhoid.—Nuñez remarks that the suprarenals are involved in typhoid both early and constantly, as a rule. This is the cause of the hyposthenia, the hypotension, the hypocholesterolemia, the dicrotic pulse and the dissociation between the pulse and the temperature. He makes a point of daily subcutaneous injection of epinephrin in every case of typhoid in which one or more of these five symptoms are observed.

Partitioned Off Otitis Media.—Regules' illustrations show that, instead of being general, the inflammatory process may be restricted to some one point in the middle ear, where the pus is walled in. In puncturing, if the needle does not happen to hit this point, the puncture may not give any relief, and this possibility should be borne in mind when relief does not follow promptly on paracentesis. He reports two cases.

Quantitative Test for Albumin in Cerebrospinal Fluid.—Prunell's diaphanometric method was described in these columns, April 19, 1919, p. 1196.

The Protozoa of Uruguay.—Cordero describes, with four plates, fifty varieties of ciliated protozoa found in the fresh waters of Uruguay.

Archivos Brasileiros de Medicina, Rio de Janeiro

January, 1919, **9**, No. 1

*The Hormones and the Vegetative Nervous System. O. Gallotti. —p. 3.
*Metameric Abnormal Contraction and Relaxation. C. C. Da Costa. —p. 19.
Kaolin in Treatment of Cholera. W. Almeida.—p. 23.

The Hormones and the Vegetative Nervous System.—Gallotti argues that the harmonious action of the involuntary organs is due in large part to the hormones influencing the autonomous and the sympathetic nervous system. He reviews the action of the different endocrine glands in turn, saying that the relations between the hormones and the vegetative system must be studied before we can prescribe organotherapy intelligently.

Metameric Dysthenia.—Da Costa discusses the abnormal conditions in regard to contraction or relaxation which are liable to be observed in certain organs belonging to the same metamere. Spasm of the esophagus, of the glottis, and of the vagina displays this metameric character. The uterus can also present circular constriction at any height.

Brazil-Medico, Rio de Janeiro

March 1, 1919, **33**, No. 9

*Beriberi. C. Fraga.—p. 65. Commenced in No. 7, p. 49.
*Regional Anesthesia. J. de Mendonça.—p. 68. Cont'd in No. 7, p. 52.

Deficiency Disease and Beriberi.—Fraga gives the history of the research on beriberi in different countries, and reports some personal research at Bahia. Nine convicts in solitary confinement consented to a dietary experiment and were fed with polished rice or polished plus sterilized rice or sterilized beans. The penitentiary in question has had beriberi endemic in some years and not in others, although the diet is constantly the same. The nine convicts acquired a distaste for this sterilized diet, and it induced digestive disturbances so that the experiment had to be suspended by the thirty-sixth to the thirty-eighth day. No nervous symptoms developed in any of them. Another series of experiments is now under

way with another group of convicts in the penitentiary who have been promised pardons if they hold out. They are now at the forty-third day, but still no nervous symptoms are apparent in any of them. The experiments with fowls reproduced typical polyneuritis gallinarum. In Brazil, both Allen M. Walcott (THE JOURNAL, Dec. 18, 1915, p. 2145) and A. de Assis found it easy to induce this deficiency disease in fowls. Assis induced it with two cereals not previously experimented with elsewhere, namely, the bean *Phaseolus vulgaris* and mandioca, *Manihot utilissima*. Fraga's conclusions are that polyneuritis gallinarum and beriberi in man are quite distinct morbid entities. The cerebellar symptoms in particular distinguish the former exclusively, and this alone would invalidate the generalization of the conclusions from this disease to man. In man, he declares, the dietary deficiency acts merely as a predisposing cause for human beriberi.

Regional Anesthesia.—De Mendonça traces the history of regional anesthesia from the days of myths to the present time, reviewing the various efforts made to induce the deepest analgesia with the minimum of the anesthetic. His conclusions from this analysis and his own experiences with 1,500 operations done under regional anesthesia, emphasize that regional anesthesia, done with procain (novocain) associated with epinephrin, is the greatest progress realized in surgery since the advent of aseptic surgery. Local anesthesia or blocking the trunk nerve, alone or together, suffice for all surgical operations except abdominal operations which require separation of inflammatory adhesions or much manipulation of viscera. To date there has been no fatality attributable to them. Even in the exceptional cases in which they do not suffice, they can be applied advantageously in combination with general anesthesia. For intractable children or very nervous adults it is better to resort at once to general anesthesia. Local anesthesia, with or without blocking the trunk nerve, should always be the preference in all cases of shock, extreme inanition, or with grave lesions of kidneys, liver or lungs.

Medicina Ibera, Madrid

Feb. 15, 1919, **6**, No. 67

*Nephritis. S. Pascual.—p. 149. Cont'n.
Iodin in Prophylaxis. A. S. Alvarez.—p. 154.

Nephritis.—In this instalment of his long serial article on nephritis, Pascual discusses pain in the kidney without actual nephritis. Two cases of this nephritis dolorosa are described. The cure was immediate and permanent after decortication and fastening the kidney in place.

Prensa Medica Argentina, Buenos Aires

Feb. 20, 1919, **5**, No. 26

*Protective Action of Antiserum plus Leukocytes. A. Bachmann.—p. 253.
*Dystrophy in Infant from One-Sided Diet. J. C. Navarro.—p. 254.
*The Prevailing Epizootic. R. Kraus.—p. 256.
Phenomena Observed when Roentgen Rays Are Passed Through Openings of Special Sizes and Shapes. J. Laub.—p. 256.
*Heliotherapy in Chronic Nephritis. A. Cetrángolo.—p. 257.

Combined Action of Serum and Leukocytes in Experimental Peritonitis.—Bachmann injected antityphoid serum plus leukocytes into the guinea-pig peritoneum and found that, in certain proportions, this mixture seemed to protect the animal against an otherwise pathogenic inoculation of typhoid cultures. There seemed to be an optional curve for the proportions, above and below which there was no protective action.

Starch Dystrophy.—In Navarro's case the 5 months' infant had been fed inadequately and exclusively with cereal gruels. It had not lost much in weight but was much debilitated and had developed a necrotic abscess on the shoulder. This yielded to potassium permanganate at 0.5 per thousand, applied three times a day. The child was fed with breast milk for four days, then skimmed milk and whole milk, and rapidly recuperated.

Epizootic Meningitis.—Kraus relates that last year and again this year there has been an "enzootic meningo-encephalitis" prevailing among horses in Argentina. Nothing pathologic could be found in the organs of the horses, but rabbits injected with emulsions of the brains died with symptoms resembling those of rabies. The brains of the rabbits showed no macroscopic lesions, but proved as virulent for other rabbits as the original emulsion. The passages from the rabbit exclude the assumption of poisoning from food. A gram-negative diplococcus was cultivated from the horse brains. See also Buenos Aires Letter, p. 1309.

Heliotherapy in Chronic Nephritis.—Cetrángolo gives the tracings from two cases of chronic nephritis showing losses of weight from 300 to 1,200 gm. under the influence of heliotherapy, while the peripheral vasodilation relieved the heart of a portion of its work. The minimal arterial tension also declined.

Revista Española de Med. y Cir., Barcelona

January, 1919, **2**, No. 7

*Operative Treatment for Gallstones. E. Ribas y Ribas.—p. 1.

Operative Indications with Gallstones.—In Ribas' 116 operative cases of gallstones, fully 50 per cent. never had actual gallstone colic. The diagnosis in many cases was based merely on vague, indefinite sensations, but starting in the subhepatic region. The gallstone itself, as a simple foreign body, never interests the surgeon, merely the consequences from its presence. The clinician likewise is not interested in the expulsion of the stone, but in the condition left afterward. If the gallstone proves to be round and composed of cholesterin, this is an aseptic concretion, and may be assumed to have done little if any damage. The discovery of diverticuli in the walls of the gallbladder has confirmed the general assumption that infection once installed is difficult to dislodge—an additional reason for cholecystectomy. This removes the organ which is the source of gallstone production while the infection responsible for the development of the gallstones has rendered it functionally useless. The horse, the ass and certain other animals have no gallbladder, and experimental research and the clinic confirm that this organ is not necessary to life. In his 27 cases of simple cholecystectomy, one patient with a hydatid cyst in the liver succumbed to pneumonia; the others all recovered; 13 died in the 70 cases with drainage of the hepatic duct. In 10 of these cases the progressive course of the inflammatory process around was responsible for the fatal outcome.

Ribas' experience teaches also that, as a rule, the danger is greater with an extremely acute cholecystitis developing for the first time than with an equally acute flaring up of a chronic cholecystitis. With the latter the walls are thicker and there is less danger of perforation. The form with typhoid is distinguished by the rapid enlargement of the gallbladder accompanied by high fever and local pain. All this may retrogress spontaneously, but if the toxic action is pronounced and it keeps up for several days, in typhoid or paratyphoid, he advises cholecystectomy. He does not approve of palliative operations except for certain rare indications. He gives an illustration of a case in which acute cholecystitis during convalescence from paratyphoid developed fatal perforation under expectant treatment, and describes seventeen different types of chronic gallbladder disease, illustrating specimens, with two colored plates. In one case the liver was completely wrapped around the gallbladder as far as the cystic duct, and adherent.

He has operated in ten cases of subphrenic abscess traceable to gallstones. There is generally a secondary pleuritic effusion just above in such cases and this may mislead the diagnosis. In one case puncture was negative until the needle was inserted on the posterior axillary line, between the fifth and sixth ribs, which opened up a large extraperitoneal abscess between the diaphragm and the rear of the convex surface of the liver. A complete cure was not realized, however, until the gallbladder was removed five months later. There were evidences of pancreatitis in 42 of Ribas' 116 cases, and there was a history of gallstones in 5 of his 12 operative cases of hemorrhagic pancreatitis. He regards cholecystectomy as the surest means to cure pancreas mischief with gallstones. He has had 3 cases of cancer of the gallblader and a stone was found in this organ in one of them.

Revista Cubana de Obstetricia y Ginecologia, Havana

January, 1919, **1**, No. 1

Plea for More Conservative Management of Gynecologic Disease. F. M. Capote.—p. 7.
Prophylaxis of Puerperal Infection. E. de Aragón.—p. 15.
Bilateral Urinary Calculus. J. A. Presno y Bastiony.—p. 21.
Fetid Leukorrhea. M. C. Latatú.—p. 32.

Revista del Instituto Bacteriologico, Buenos Aires

November, 1918, **1**, No. 5

Influence of Snake Venom on Coagulation of Blood. B. A. Houssay and A. Sordelli.—p. 485; Id. and J. Negrete.—p. 565.
Research on Physiologic Action of Ergot of Cortaderia Dioica. B. A. Houssay and E. Hug.—p. 617.

Revista Medica del Rosario

March, 1919, **9**, No. 1

*Specific Phagocytosis in the Immunized. A. Bachmann.—p. 1.
*Epicondylalgia. J. M. Maidágan.—p. 24.
*Mastoiditis in Infants. M. Steinsleger—p. 29.

Phagocytes in Immunity.—Bachmann is professor of bacteriology at the University of Buenos Aires, and he states: "The series of experiences here described have demonstrated for the first time the presence of some special substance in the leukocytes of immunized animals. The presence of this substance renders these leukocytes better fitted than others to contend with the infection. This *anticuerpo leucocitario* is found only in small amounts in the leukocytes. This is explained by the assumption that, being an element of living cells, it is reproduced in proportion as it is used up. The existence of this substance throws light on certain phenomena which have been hitherto obscure." He analyzes these phenomena in detail, adding "The antibodies and the serum, etc., are the vanguard, and these alone may in favorable cases, arrest the microbian infection; but the really effectual fight is that waged by the leukocytes, but the leukocytes do not interfere in this way until the humoral antibodies have failed." . . . "The phagocytes from immunized animals display this new property even in vitro—a specific phagocytosis."

Epicondylalgia.—Maidágan cured a typical case of epicondylalgia in a boy of 12 by immobilization of the arm in semiflexion, leaving an opening in the dressings through which the region of the elbow was painted with iodin on alternate days. At the end of two weeks the elbow was lightly massaged and exercised and by the end of the month the pains and functional impotence were entirely overcome, and the cure has been permanent.

Mastoiditis in Infants Without Otorrhea.—Steinsleger has had to operate for mastoiditis in nine cases in young infants and there was no otorrhea in 77 per cent. in this group. One infant was only 45 days old, and the otitic origin of the mastoiditis was rendered evident by perforation of the mastoid on the seventh day of the abscess. In two cases an incision had to be supplemented later with the radical operation before a cure was realized. Mastoiditis in young infants seems to be relatively benign, and the child seems to bear it remarkably well. But this does not justify half-way measures; the results of such are deplorable. He never encountered any remote complications in young infants such as he has witnessed in older children. In the infants there was always caries of the mastoid process, and the operation was thus facilitated. Physicians should be on the alert to detect otitis in infants as it is much more frequent than generally imagined.

Revista de Psiquiatria, Lima

January, 1919, **1**, No. 3

Polyneuritic Psychosis. M. G. Olaechea—p. 133.
Mental Disturbances in Malaria. C. A. Bambaren.—p. 137.
Psychologic Psychiatry. H. F. Delgado.—p. 146.

Semana Medica, Buenos Aires

Jan. 30, 1919, **26**, No. 5

Retrohepatic Dulness in Typhoid. M. E. Pignetto.—p. 105.
Internal Genital Aplasia. C. Lanza.—p. 107.
Localization of Oval Foramen. A. Sacco.—p. 113.
Paraffin Atomizer. J. M. and M. E. Jerez.—p. 126.

Feb. 6, 1919, **26**, No. 6

*Infant Feeding and Diarrhea. J. C. Navarro.—p. 131.
Topography of the Oval Foramen. A. Sacco.—p. 133.
*Optic Neuritis with Thyroid Insufficiency. J. C. M. Fournier.—p. 139.
Shower Baths and Swimming Pools in Schools. E. R. Coni.—p. 145.
Film Treatment of Varicose Ulcers. A. Ullio.—p. 146.
Progress in Public Health. E. R. Coni.—p. 147; Id.—p. 149.
Limitations of Version with Placenta Praevia. F. Villanueva.—p. 151.

Infant Pathology.—Navarro warns that when the breast-fed infant is not obtaining its due quantum of breast milk, its resisting power is low and it is liable to develop fever with slight infections. The physician not realizing that the child is suffering from inadequate quantities of food is liable to shut off the food still more, and purge. Naturally the fever subsides with inanition, and the assumption is confirmed that the breast milk is the causal factor. Navarro emphasizes that disturbances for which the breast milk is actually reponsible are so rare as to be practically negligible in general practice, so this mistake should not be made. When the breast milk is being given in too large quantities, the disturbance is mild, moderate diarrhea, some vomiting but not severe or frequent, and some discomfort. Inadequate feeding is usually accompanied by vomiting and often with some infections in skin or throat or nose. If possible, a wetnurse giving more milk should be provided. If this is not practicable, cow's milk should be given in addition, modified as indicated. In infants between 1 and 4 months old, the cow's milk had better be given immediately after the child has nursed, to take advantage of the glands' secretions. Infants over 4 months old can have one feeding of cow's milk instead of the breast.

Optic Neuritis with Hypothyroidism.—The neuritis was bilateral in the woman of 24 with signs of mild, chronic thyroid insufficiency during the last seven years except in her three pregnancies. Three months after her last two pregnancies vision became impaired. By exclusion the optic neuritis was ascribed to the thyroid insufficiency and thyroid treatment was instituted. Vision improved essentially under it, but every time it was suspended the visual acuity dropped from ⅓ to 1/6. The optic nerve in the other eye had been atrophied for nearly four years. There was a family tendency to obesity, and the visual disturbance was probably a manifestation of some upset in the endocrine glands. The thyroid treatment aided in restoring the balance to a certain extent, and visual acuity of ⅓ was regained, but it dropped to 1/6 every time the thyroid treatment was suspended for about five days.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

March 1, 1919, **1**, No. 9

Medical Education in England. G. van Rijnberk.—p. 649.
*Acute Lymphadenoid Leukemia. J. L. A. Peutz.—p. 655.
The Physician as a State Official. C. J. Brenkman.—p. 664.

Lymphadenoid Leukemia.—Peutz describes a case of acute leukemic lymphadenosis in a boy of 4. He was the ninth among thirteen children, and all the rest were apparently healthy, and he had always been well except that he seemed a little paler than the others. He began to show skin symptoms suggesting Werlhof's disease, followed in two days by hemorrhage from the kidney and enlargement of the spleen and peripheral glands, with death the eighth day. The blood was sterile and there was no fever, but the whites ran up to 720,000. He had had a fall two weeks before the first symptoms, and the shock from this, superposed on the status lymphaticus, may have brought on the disease.

Hospitalstidende, Copenhagen

Jan. 29, 1919, **62**, No. 5

*Osteoplastic Resection of the Knee. P. Panum.—p. 129.
*Vertigo. P. Lorenzen.—p. 136.
Carrel-Dakin Treatment Applied to Peace Time Surgical Lesions. P. V. Tuxen.—p. 141.

Osteoplastic Resection of the Knee.—Panum reports the details of three cases in which he applied Iselin's method of correcting ankylosis. A wedge is cut, but instead of remov-

ing the wedge it is twisted completely around until its base lies in the popliteal space, and heals in place here. The wedge does not have to be more than half the size of the wedge with resection, but the chief advantage of this technic is that the leg is not shortened by the operation. He makes a point of cutting the tendons preliminary to the resection, saying that in many cases of angular ankylosis the ankylosis might have been avoided if the tendons had been severed at the first resection. When the knee is flexed beyond 45 or 60 degrees it might be possible to apply this technic several times in succession, correcting only a part of the angle at a time. He reiterates that this osteoplastic resection is simple, certain and free from danger. He modified the Iselin technic in three of his six cases, cutting out a supplementary wedge.

Vertigo.—Lorenzen has noticed that dizziness for which the digestive organs are responsible is generally continuous but often with exacerbations in connection with meals, usually soon afterward, and is often accompanied with more or less nausea or other symptom of digestive disturbance. The dizziness experienced in an elevator or in looking down from a height he is convinced is of mental origin. It can generally be banished by seizing hold of something solid. He has encountered a number of cases in which a fibrositic affection in the muscles of the neck caused dizziness on turning to look back or other sudden movement of the head. He explains the mechanism of this dizziness and relates that a few sittings of massage of the fibrositic muscle put an end to the dizziness. In one severe case of the kind, the woman of 55 experienced this dizziness so much and so often that she did not dare to go on the street. Under eleven sittings of massage it disappeared and a few more sittings banished the last trace of the fibrositis. When the latter is of long standing, this cannot be counted on, but temporary relief is always obtained. Correcting digestive disturbance aids materially in the cure, as also measures to soothe the over-excitable nervous system.

March 12, 1919, **62**, No. 11

*Conditions for Danish Science and for International Scientific Research After the War. T. Rovsing.—p. 337.

International Scientific Research.—In this address delivered to Danish students, Rovsing portrayed the opportunities which the present times offer to Denmark to take a leading place in international scientific conclaves. He commented further on the advantages that would accure to all if some one language were to be selected as the official speech for scientific assemblies. "At the present moment," he continued, "French stands a better chance for acceptance than any other language. The allied and the neutral countries would probably accept it without protest in consideration of the admiration and sympathy which France has won by its stand during the war."

Ugeskrift for Læger, Copenhagen

Feb. 20, 1919, **81**, No. 8

*Paralysis of Respiration with Brain Abscess. G. V. T. Borries.—p. 325.

Paralysis of Respiration with Brain Abscess.—Borries reports a personal case of this kind and analyzes forty-seven he has found on record. It does not seem to be generally known that it may prove possible to resuscitate the patient even with complete arrest of the respiration, by immediate incision down to the brain abscess. Artificial respiration is only a makeshift and does not save the patient. There is one case on record in which touching the medulla oblongata with the finger started the breathing again, and this might be tried as the last resource. It acted possibly by releasing the impacted cerebellar tonsil. The Trendelenburg position may aid. Tracheotomy was done in seven cases, but it was probably done from misapprehension of the cause of the apnea. Artificial respiration and immediate incision down to the abscess should be tried in even the most apparently desperate cases. Coma with a brain abscess is no contra-indication to the operation. Only in twenty-one of the forty-seven cases was the abscess opened up. The immediate effect of incising and clearing out the abscess was startling. In Borries' case the livid face abruptly changed to the normal tint and spontaneous respiration started up the moment the skull was opened, even before the dura had been incised. Borries' patient was a woman of 34 with symptoms of an otogenous cerebral abscess, and the sudden paralysis of the respiration was combated with artificial respiration and an incision in the temporal lobe. The woman began to breathe spontaneously and had no further disturbance in respiration till her death from the effects of the large abscess extending into the occipital lobe, found at necropsy. Borries is inclined to regard circulatory disturbance from some trivial cause as the last straw that upsets the precarious balance of the brain suffering from the compression by the abscess, tumor or accumulation of blood. This sets up a vicious circle. In his compilation of forty-seven cases, the lesion was in the cerebellum alone in thirty-two and in the brain alone in thirteen. The paralysis of respiration followed on lumbar puncture in quite a number of cases. Tabes and various poisons were responsible for it in other cases, and there are undoubtedly many instances of death from stoppage of breathing from an intracranial lesion, without special recognition of this factor.

Feb. 27, 1919, **81**, No. 9

*Circumscribed Edema. N. R. Christoffersen.—p. 381.
German Science Since the Armistice. J. W. S. Johnsson.—p. 408.

Circumscribed Edema.—Christofferson discusses the pathogenesis of Quincke's circumscribed edema, and describes various experiences which, in connection with the "war edema," seem to indicate that the internal secretions have more to do with it than has been suspected hitherto. In a case described in detail the little girl had been having hemorrhagic purpura, and the blood pressure was abnormally high. Transient edema developed in different regions in turn, and a marked tendency to retention of water and salt was evident although there was nothing in heart or kidneys to explain this tendency to edema. In this and other cases in his experience, he never found anything to suggest a peculiarly unstable nervous system.

Upsala Läkareförenings Förhandlingar

July 20, 1918, **23**, Supplement

*Tuberculous Glandular Disease in Relation to Pulmonary Tuberculosis. A. Wallgren.—p. 1.
The Course of Experimental Tuberculosis in Rabbits of Different Ages. A. Wallgren.—p. 127.

Prognosis with Tuberculous Glandular Disease.—Wallgren's attention was attracted to the rarity of lymphomas in persons with pulmonary tuberculosis, and to the apparently benign form of the pulmonary processes when they were associated with lymphomas. Examining the records at the Upsala clinic of 526 cases of tuberculous glands given operative treatment from ten to thirty years ago, he was able to trace the history since in 251 cases. Of the 79 with sound lungs at the time of the operation, 63 still are free from pulmonary disease; 9 have pulmonary tuberculosis; 5 had miliary tuberculosis and 2 tuberculous meningitis. Of the 29 with pulmonary tuberculosis at the time, 9 now have clinically sound lungs as also 3 of the 8 suspects. Of the total gland cases, 16.5 per cent. had pulmonary tuberculosis at the time. Of the total 224 traced cases, 3 per cent. had terminated with meningitis and 4 per cent. in miliary tuberculosis. On the whole, the pulmonary tuberculosis in these lymphoma cases seemed to be of a benign form. In 12 cases with a fatal outcome, the interval before death averaged five years; the range was from two to eleven years. Six of the patients were under 16 and only 3 over 30 years old. A number of writers have mentioned that in certain families some members develop pulmonary tuberculosis while others develop only tuberculous adenopathies and the lungs seem to escape. Among 516 tuberculous persons given treatment at the chest clinic at Upsala, only 1.7 per cent. had a history of enlarged and probably tuberculous glands before the onset of the pulmonary process. The general impression from the data presented, including a tabulation of statistics from various foreign clinics, is to the effect that the glandular disease augments the resisting powers, and determines a milder course if pulmonary lesions develop.